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DOCTOR OF PHILOSOPHY

Monitoring the condition of semi-natural vegetation: the application of remote sensing and geographical information systems (GIS)

Williams, Jeremy Hugh

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Monitoring the condition
of semi-natural vegetation:
the application of remote sensing
and geographical information systems (GIS).

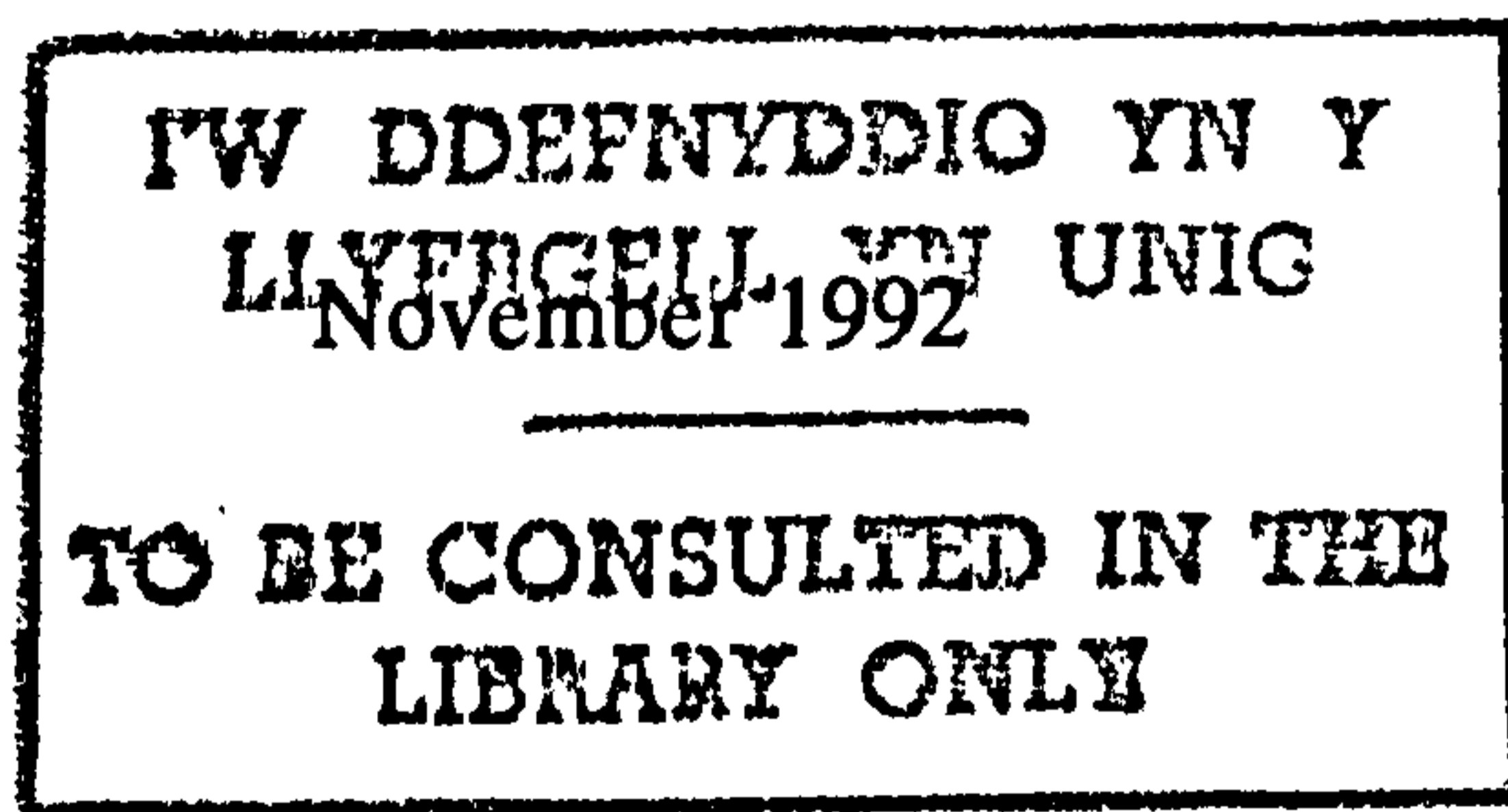
VOLUME 2, APPENDICES.

Jeremy Hugh WILLIAMS

BSc (Hons) Wales, MIAgrE, MICFor.

School of Biological Sciences

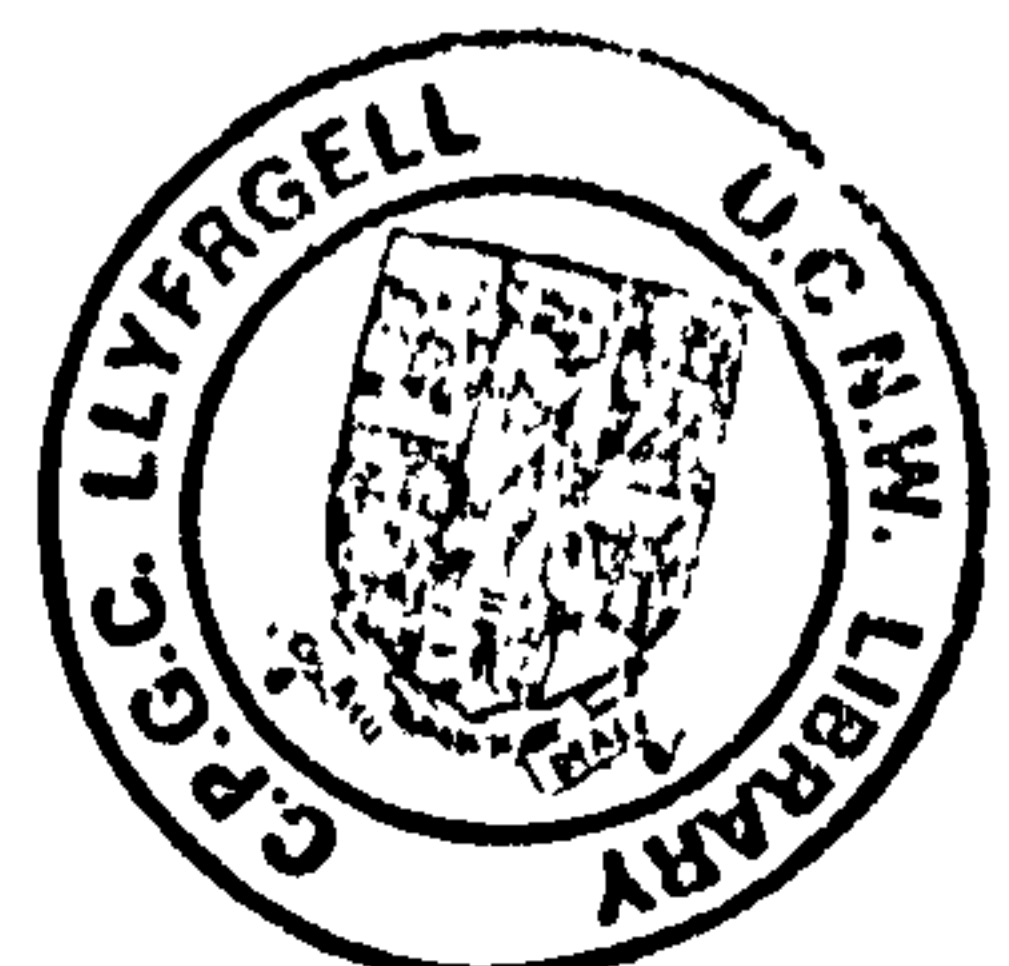
University of Wales, Bangor, UK.



A thesis submitted in candidature for the degree of

Philosophiae Doctor

of the University of Wales.



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CRYMLYN BOG STUDY

RELATING AIRBORNE SCANNER DATA TO FIELD-MEASURED VARIABLES

AIRBORNE THEMATIC MAPPER (ATM) DATA

TABLE 3.4

TABLE 3.7

TABLE 3.8

TABLE 3.4

DIGITAL NUMBERS (DN) EXTRACTED FROM CRYMLYN BOG DAEDALUS DATA SAMPLES, IN GROUPS OF FOUR, CORRESPOND TO FIELD SURVEY SITES

| SAMPLE | DN1 | DN2 | DN3 | DN4 | DN5 | DN6 | DN7 | DN8 | DN9 | DN10 | DN11 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 1 | 34 | 44 | 53 | 64 | 52 | 57 | 61 | 67 | 77 | 50 | 124 |
| 2 | 44 | 45 | 52 | 64 | 52 | 55 | 58 | 65 | 69 | 50 | 126 |
| 3 | 45 | 43 | 52 | 63 | 51 | 53 | 56 | 64 | 75 | 47 | 126 |
| 4 | 45 | 44 | 52 | 63 | 51 | 54 | 56 | 63 | 68 | 47 | 126 |
| 5 | 46 | 44 | 55 | 66 | 56 | 53 | 49 | 49 | 58 | 45 | 112 |
| 6 | 39 | 46 | 56 | 68 | 58 | 53 | 48 | 49 | 64 | 48 | 115 |
| 7 | 44 | 48 | 60 | 73 | 63 | 63 | 60 | 61 | 71 | 51 | 113 |
| 8 | 44 | 48 | 59 | 71 | 62 | 58 | 53 | 55 | 77 | 53 | 119 |
| 9 | 34 | 39 | 43 | 58 | 46 | 30 | 26 | 31 | 40 | 35 | 137 |
| 10 | 36 | 41 | 45 | 60 | 47 | 35 | 31 | 34 | 42 | 37 | 130 |
| 11 | 39 | 40 | 45 | 60 | 47 | 34 | 29 | 33 | 45 | 38 | 132 |
| 12 | 40 | 42 | 49 | 64 | 51 | 41 | 38 | 42 | 50 | 42 | 125 |
| 13 | 44 | 46 | 55 | 70 | 57 | 52 | 53 | 61 | 72 | 53 | 123 |
| 14 | 40 | 48 | 58 | 73 | 61 | 54 | 53 | 59 | 76 | 58 | 123 |
| 15 | 42 | 46 | 56 | 70 | 60 | 52 | 52 | 58 | 68 | 55 | 124 |
| 16 | 44 | 48 | 56 | 72 | 61 | 58 | 58 | 63 | 75 | 62 | 121 |
| 17 | 39 | 43 | 53 | 65 | 53 | 49 | 51 | 58 | 71 | 51 | 119 |
| 18 | 38 | 44 | 53 | 65 | 53 | 51 | 53 | 60 | 72 | 50 | 113 |
| 19 | 38 | 43 | 51 | 63 | 51 | 47 | 48 | 55 | 65 | 49 | 123 |
| 20 | 43 | 42 | 52 | 65 | 52 | 48 | 49 | 56 | 66 | 49 | 118 |
| 21 | 35 | 41 | 47 | 61 | 48 | 38 | 36 | 43 | 58 | 47 | 119 |
| 22 | 29 | 40 | 46 | 60 | 47 | 35 | 32 | 38 | 59 | 44 | 113 |
| 23 | 31 | 42 | 47 | 61 | 48 | 36 | 33 | 37 | 60 | 47 | 116 |
| 24 | 37 | 42 | 49 | 63 | 51 | 39 | 36 | 41 | 64 | 48 | 117 |
| 25 | 43 | 42 | 52 | 63 | 52 | 59 | 63 | 69 | 79 | 53 | 108 |
| 26 | 39 | 40 | 52 | 62 | 52 | 58 | 59 | 62 | 73 | 49 | 110 |
| 27 | 43 | 43 | 55 | 65 | 54 | 64 | 68 | 73 | 81 | 53 | 107 |
| 28 | 45 | 44 | 53 | 63 | 52 | 60 | 63 | 69 | 76 | 52 | 111 |
| 29 | 41 | 40 | 47 | 63 | 53 | 41 | 37 | 40 | 57 | 46 | 108 |
| 30 | 34 | 41 | 49 | 65 | 55 | 45 | 42 | 44 | 61 | 51 | 112 |
| 31 | 38 | 41 | 48 | 65 | 55 | 42 | 38 | 42 | 57 | 49 | 110 |
| 32 | 38 | 41 | 48 | 64 | 55 | 43 | 39 | 42 | 59 | 50 | 112 |
| 33 | 56 | 58 | 72 | 79 | 73 | 84 | 80 | 75 | 82 | 60 | 114 |
| 34 | 58 | 58 | 73 | 79 | 74 | 88 | 85 | 78 | 84 | 61 | 112 |
| 35 | 55 | 59 | 73 | 81 | 75 | 85 | 82 | 75 | 85 | 60 | 113 |
| 36 | 60 | 59 | 71 | 79 | 73 | 86 | 84 | 79 | 86 | 61 | 111 |
| 37 | 51 | 54 | 67 | 76 | 71 | 78 | 74 | 71 | 81 | 62 | 115 |
| 38 | 53 | 54 | 66 | 75 | 69 | 78 | 74 | 71 | 86 | 64 | 117 |
| 39 | 49 | 50 | 62 | 71 | 65 | 74 | 71 | 69 | 81 | 58 | 115 |
| 40 | 54 | 53 | 67 | 75 | 69 | 82 | 78 | 73 | 87 | 62 | 114 |
| 41 | 54 | 48 | 59 | 67 | 61 | 71 | 68 | 66 | 83 | 55 | 126 |
| 42 | 41 | 48 | 59 | 68 | 61 | 72 | 71 | 69 | 76 | 54 | 123 |
| 43 | 45 | 50 | 63 | 72 | 65 | 77 | 73 | 69 | 85 | 59 | 133 |
| 44 | 43 | 49 | 61 | 69 | 63 | 75 | 73 | 71 | 80 | 58 | 128 |
| 45 | 56 | 58 | 65 | 76 | 71 | 75 | 72 | 67 | 85 | 61 | 113 |
| 46 | 56 | 55 | 64 | 76 | 71 | 74 | 69 | 66 | 87 | 61 | 115 |
| 47 | 50 | 58 | 67 | 76 | 73 | 80 | 77 | 72 | 85 | 63 | 115 |
| 48 | 53 | 58 | 65 | 75 | 73 | 80 | 77 | 71 | 85 | 62 | 116 |
| 49 | 45 | 46 | 51 | 65 | 57 | 52 | 45 | 43 | 69 | 51 | 123 |
| 50 | 42 | 46 | 50 | 64 | 56 | 50 | 44 | 43 | 69 | 51 | 128 |
| 51 | 48 | 47 | 52 | 65 | 57 | 53 | 46 | 45 | 65 | 50 | 121 |
| 52 | 48 | 46 | 51 | 65 | 56 | 52 | 45 | 44 | 65 | 50 | 122 |
| 53 | 46 | 47 | 52 | 65 | 55 | 47 | 41 | 41 | 70 | 52 | 124 |
| 54 | 53 | 46 | 50 | 63 | 55 | 48 | 40 | 39 | 67 | 52 | 123 |
| 55 | 51 | 46 | 51 | 64 | 55 | 49 | 42 | 41 | 64 | 50 | 125 |
| 56 | 47 | 46 | 51 | 64 | 55 | 48 | 41 | 41 | 61 | 51 | 124 |

TABLE 3.4 (continued)

| | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|-----|
| 57 | 48 | 51 | 61 | 72 | 64 | 64 | 58 | 55 | 71 | 53 | 109 |
| 58 | 52 | 51 | 61 | 72 | 65 | 64 | 58 | 55 | 77 | 53 | 110 |
| 59 | 55 | 53 | 63 | 74 | 67 | 66 | 59 | 56 | 73 | 54 | 107 |
| 60 | 54 | 50 | 60 | 72 | 64 | 61 | 54 | 52 | 70 | 53 | 109 |
| 61 | 44 | 48 | 54 | 68 | 59 | 48 | 41 | 42 | 65 | 54 | 124 |
| 62 | 43 | 45 | 51 | 67 | 57 | 45 | 39 | 39 | 67 | 54 | 124 |
| 63 | 40 | 46 | 53 | 67 | 58 | 50 | 43 | 44 | 71 | 54 | 126 |
| 64 | 46 | 47 | 53 | 67 | 58 | 48 | 41 | 42 | 70 | 54 | 122 |
| 65 | 42 | 41 | 48 | 62 | 53 | 48 | 42 | 41 | 62 | 48 | 119 |
| 66 | 36 | 42 | 47 | 60 | 51 | 49 | 44 | 43 | 58 | 46 | 120 |
| 67 | 40 | 43 | 48 | 63 | 52 | 46 | 41 | 43 | 61 | 47 | 117 |
| 68 | 43 | 42 | 48 | 61 | 52 | 46 | 41 | 41 | 60 | 44 | 115 |
| 69 | 45 | 47 | 55 | 66 | 55 | 53 | 53 | 59 | 79 | 56 | 136 |
| 70 | 47 | 45 | 55 | 67 | 55 | 54 | 55 | 60 | 77 | 56 | 133 |
| 71 | 40 | 45 | 53 | 66 | 54 | 51 | 51 | 59 | 77 | 54 | 137 |
| 72 | 41 | 46 | 53 | 66 | 53 | 51 | 50 | 57 | 81 | 54 | 135 |
| 73 | 43 | 44 | 53 | 65 | 54 | 55 | 55 | 60 | 71 | 53 | 122 |
| 74 | 44 | 46 | 55 | 66 | 55 | 59 | 58 | 62 | 78 | 54 | 122 |
| 75 | 42 | 44 | 54 | 67 | 54 | 55 | 56 | 61 | 74 | 53 | 124 |
| 76 | 39 | 45 | 54 | 66 | 54 | 55 | 56 | 62 | 74 | 54 | 122 |
| 77 | 49 | 47 | 54 | 66 | 57 | 49 | 44 | 45 | 69 | 53 | 121 |
| 78 | 39 | 49 | 57 | 71 | 61 | 53 | 48 | 49 | 73 | 56 | 124 |
| 79 | 37 | 49 | 57 | 68 | 61 | 53 | 47 | 48 | 77 | 59 | 127 |
| 80 | 47 | 49 | 57 | 71 | 61 | 54 | 50 | 51 | 71 | 57 | 125 |
| 81 | 48 | 49 | 58 | 69 | 62 | 60 | 55 | 55 | 77 | 59 | 123 |
| 82 | 47 | 48 | 56 | 68 | 59 | 55 | 51 | 52 | 77 | 58 | 124 |
| 83 | 43 | 44 | 51 | 63 | 54 | 49 | 44 | 45 | 69 | 51 | 121 |
| 84 | 43 | 47 | 55 | 67 | 59 | 52 | 47 | 47 | 67 | 51 | 125 |
| 85 | 39 | 47 | 54 | 68 | 62 | 56 | 48 | 45 | 70 | 55 | 119 |
| 86 | 49 | 47 | 54 | 69 | 63 | 58 | 50 | 46 | 70 | 56 | 117 |
| 87 | 49 | 48 | 53 | 68 | 62 | 55 | 47 | 45 | 73 | 55 | 119 |
| 88 | 47 | 47 | 53 | 68 | 63 | 56 | 49 | 46 | 76 | 55 | 117 |
| 89 | 40 | 48 | 54 | 67 | 59 | 55 | 49 | 48 | 70 | 52 | 119 |
| 90 | 49 | 48 | 54 | 66 | 59 | 55 | 49 | 47 | 68 | 52 | 121 |
| 91 | 53 | 48 | 55 | 69 | 61 | 55 | 49 | 48 | 76 | 54 | 122 |
| 92 | 45 | 48 | 54 | 67 | 60 | 54 | 49 | 48 | 74 | 55 | 124 |
| 93 | 47 | 50 | 57 | 69 | 62 | 63 | 58 | 56 | 74 | 55 | 113 |
| 94 | 43 | 48 | 57 | 68 | 61 | 61 | 56 | 54 | 76 | 53 | 114 |
| 95 | 50 | 49 | 56 | 68 | 61 | 62 | 57 | 55 | 77 | 52 | 117 |
| 96 | 48 | 50 | 57 | 68 | 62 | 62 | 57 | 54 | 69 | 53 | 115 |
| 97 | 51 | 51 | 61 | 71 | 64 | 66 | 60 | 57 | 75 | 57 | 124 |
| 98 | 47 | 49 | 59 | 69 | 61 | 64 | 59 | 58 | 80 | 58 | 124 |
| 99 | 45 | 51 | 61 | 72 | 65 | 68 | 62 | 59 | 81 | 59 | 123 |
| 100 | 45 | 50 | 59 | 70 | 63 | 64 | 59 | 59 | 79 | 58 | 123 |
| 101 | 47 | 53 | 61 | 72 | 64 | 70 | 67 | 63 | 77 | 57 | 119 |
| 102 | 53 | 53 | 62 | 71 | 63 | 69 | 67 | 63 | 73 | 55 | 111 |
| 103 | 48 | 52 | 61 | 72 | 65 | 66 | 62 | 60 | 78 | 58 | 119 |
| 104 | 46 | 53 | 61 | 71 | 64 | 68 | 65 | 62 | 72 | 53 | 112 |
| 105 | 55 | 54 | 62 | 72 | 66 | 69 | 66 | 63 | 73 | 55 | 114 |
| 106 | 51 | 53 | 60 | 72 | 64 | 66 | 63 | 62 | 72 | 54 | 116 |
| 107 | 45 | 50 | 59 | 69 | 63 | 70 | 66 | 61 | 72 | 51 | 113 |
| 108 | 49 | 53 | 63 | 74 | 66 | 71 | 69 | 65 | 78 | 57 | 117 |
| 109 | 57 | 55 | 67 | 74 | 69 | 88 | 87 | 80 | 80 | 61 | 105 |
| 110 | 51 | 52 | 61 | 68 | 63 | 81 | 80 | 75 | 79 | 57 | 103 |
| 111 | 51 | 52 | 61 | 69 | 65 | 86 | 85 | 78 | 83 | 58 | 102 |
| 112 | 53 | 52 | 61 | 69 | 63 | 83 | 82 | 76 | 89 | 56 | 99 |
| 113 | 39 | 46 | 56 | 66 | 59 | 67 | 62 | 59 | 74 | 51 | 114 |
| 114 | 47 | 48 | 57 | 66 | 60 | 70 | 66 | 62 | 71 | 52 | 110 |
| 115 | 54 | 48 | 57 | 67 | 60 | 70 | 67 | 63 | 77 | 53 | 115 |
| 116 | 45 | 48 | 57 | 67 | 60 | 69 | 66 | 62 | 71 | 53 | 111 |
| 117 | 52 | 48 | 60 | 68 | 60 | 71 | 68 | 64 | 71 | 51 | 111 |
| 118 | 41 | 43 | 53 | 62 | 55 | 61 | 57 | 55 | 63 | 46 | 102 |
| 119 | 45 | 50 | 61 | 69 | 63 | 76 | 72 | 65 | 70 | 50 | 106 |
| 120 | 45 | 47 | 59 | 68 | 60 | 68 | 64 | 62 | 68 | 49 | 106 |

TABLE 3.4 (continued)

| | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|-----|
| 121 | 47 | 46 | 54 | 63 | 57 | 62 | 57 | 54 | 61 | 46 | 108 |
| 122 | 43 | 46 | 55 | 66 | 57 | 63 | 59 | 56 | 68 | 49 | 111 |
| 123 | 46 | 48 | 57 | 68 | 60 | 64 | 57 | 53 | 66 | 48 | 113 |
| 124 | 45 | 49 | 60 | 68 | 63 | 71 | 66 | 61 | 68 | 50 | 115 |
| 125 | 47 | 49 | 58 | 67 | 60 | 69 | 67 | 63 | 70 | 52 | 104 |
| 126 | 50 | 51 | 60 | 68 | 62 | 73 | 69 | 64 | 68 | 52 | 103 |
| 127 | 56 | 50 | 61 | 70 | 63 | 75 | 73 | 68 | 74 | 52 | 105 |
| 128 | 50 | 52 | 61 | 69 | 63 | 74 | 72 | 68 | 74 | 53 | 104 |
| 129 | 38 | 48 | 55 | 67 | 54 | 53 | 59 | 70 | 77 | 51 | 115 |
| 130 | 48 | 48 | 56 | 68 | 55 | 54 | 56 | 63 | 78 | 53 | 123 |
| 131 | 39 | 48 | 56 | 67 | 55 | 55 | 56 | 62 | 73 | 50 | 120 |
| 132 | 34 | 51 | 60 | 71 | 59 | 59 | 60 | 66 | 76 | 55 | 131 |
| 133 | 44 | 46 | 56 | 66 | 55 | 61 | 66 | 71 | 73 | 50 | 95 |
| 134 | 45 | 46 | 56 | 66 | 54 | 60 | 65 | 71 | 71 | 50 | 96 |
| 135 | 50 | 47 | 56 | 66 | 55 | 61 | 66 | 71 | 77 | 51 | 98 |
| 136 | 36 | 45 | 57 | 67 | 55 | 61 | 67 | 72 | 76 | 50 | 99 |
| 137 | 38 | 49 | 64 | 77 | 65 | 61 | 62 | 69 | 79 | 56 | 109 |
| 138 | 46 | 49 | 63 | 76 | 64 | 62 | 63 | 71 | 79 | 55 | 107 |
| 139 | 37 | 49 | 61 | 75 | 63 | 56 | 57 | 64 | 74 | 55 | 111 |
| 140 | 44 | 48 | 61 | 74 | 62 | 58 | 59 | 66 | 75 | 53 | 110 |
| 141 | 32 | 45 | 53 | 68 | 55 | 44 | 45 | 54 | 63 | 50 | 122 |
| 142 | 38 | 46 | 53 | 68 | 56 | 44 | 44 | 54 | 67 | 53 | 120 |
| 143 | 30 | 43 | 53 | 69 | 56 | 43 | 44 | 54 | 64 | 52 | 128 |
| 144 | 40 | 44 | 52 | 68 | 56 | 41 | 40 | 50 | 71 | 55 | 126 |
| 145 | 32 | 44 | 51 | 70 | 58 | 44 | 42 | 52 | 72 | 58 | 116 |
| 146 | 35 | 42 | 46 | 64 | 52 | 37 | 35 | 44 | 68 | 51 | 114 |
| 147 | 38 | 44 | 51 | 70 | 60 | 44 | 42 | 50 | 65 | 61 | 120 |
| 148 | 44 | 43 | 50 | 69 | 59 | 44 | 43 | 54 | 77 | 64 | 118 |
| 149 | 50 | 55 | 65 | 79 | 73 | 59 | 49 | 45 | 63 | 55 | 103 |
| 150 | 53 | 52 | 61 | 74 | 67 | 59 | 50 | 47 | 64 | 53 | 105 |
| 151 | 40 | 52 | 61 | 77 | 68 | 52 | 43 | 40 | 57 | 52 | 99 |
| 152 | 48 | 54 | 63 | 78 | 71 | 55 | 46 | 43 | 64 | 53 | 100 |
| 153 | 47 | 47 | 54 | 63 | 53 | 52 | 45 | 46 | 70 | 47 | 107 |
| 154 | 39 | 44 | 49 | 59 | 49 | 44 | 36 | 36 | 57 | 40 | 99 |
| 155 | 51 | 51 | 59 | 69 | 60 | 55 | 46 | 43 | 66 | 53 | 113 |
| 156 | 49 | 49 | 56 | 67 | 58 | 52 | 44 | 42 | 63 | 50 | 113 |
| 157 | 48 | 51 | 60 | 70 | 62 | 53 | 45 | 42 | 63 | 51 | 112 |
| 158 | 51 | 54 | 62 | 73 | 64 | 54 | 45 | 42 | 63 | 53 | 107 |
| 159 | 43 | 50 | 58 | 68 | 60 | 50 | 41 | 40 | 60 | 50 | 116 |
| 160 | 40 | 52 | 59 | 69 | 60 | 52 | 43 | 40 | 59 | 50 | 107 |
| 161 | 54 | 56 | 67 | 76 | 70 | 70 | 62 | 57 | 76 | 59 | 121 |
| 162 | 58 | 58 | 67 | 77 | 71 | 70 | 62 | 57 | 80 | 60 | 118 |
| 163 | 58 | 53 | 63 | 73 | 67 | 65 | 57 | 53 | 70 | 55 | 117 |
| 164 | 56 | 54 | 64 | 73 | 68 | 69 | 61 | 55 | 77 | 56 | 114 |
| 165 | 57 | 57 | 64 | 72 | 66 | 63 | 52 | 46 | 69 | 51 | 115 |
| 166 | 56 | 57 | 64 | 71 | 67 | 65 | 54 | 47 | 66 | 50 | 116 |
| 167 | 45 | 57 | 64 | 72 | 66 | 65 | 54 | 47 | 66 | 52 | 114 |
| 168 | 49 | 57 | 65 | 73 | 67 | 67 | 55 | 48 | 69 | 53 | 116 |
| 169 | 58 | 61 | 73 | 82 | 78 | 78 | 69 | 61 | 84 | 62 | 119 |
| 170 | 53 | 62 | 74 | 83 | 80 | 79 | 69 | 60 | 85 | 63 | 117 |
| 171 | 58 | 62 | 73 | 82 | 77 | 78 | 68 | 60 | 86 | 61 | 117 |
| 172 | 54 | 63 | 75 | 83 | 79 | 79 | 69 | 60 | 86 | 60 | 117 |
| 173 | 53 | 57 | 65 | 76 | 72 | 71 | 64 | 57 | 83 | 61 | 125 |
| 174 | 57 | 57 | 65 | 76 | 71 | 72 | 65 | 58 | 88 | 61 | 124 |
| 175 | 57 | 56 | 63 | 74 | 69 | 69 | 61 | 55 | 80 | 59 | 126 |
| 176 | 53 | 57 | 64 | 75 | 71 | 71 | 63 | 56 | 82 | 59 | 122 |
| 177 | 55 | 52 | 59 | 70 | 66 | 69 | 62 | 57 | 85 | 56 | 117 |
| 178 | 49 | 53 | 60 | 71 | 66 | 69 | 62 | 56 | 77 | 56 | 116 |
| 179 | 42 | 53 | 61 | 72 | 67 | 71 | 65 | 59 | 82 | 59 | 117 |
| 180 | 56 | 54 | 60 | 71 | 67 | 68 | 61 | 57 | 86 | 58 | 118 |
| 181 | 48 | 53 | 65 | 72 | 66 | 75 | 70 | 64 | 76 | 53 | 103 |
| 182 | 64 | 52 | 63 | 71 | 64 | 74 | 70 | 65 | 72 | 53 | 103 |
| 183 | 47 | 51 | 60 | 68 | 63 | 74 | 68 | 60 | 65 | 50 | 101 |
| 184 | 49 | 51 | 61 | 69 | 63 | 79 | 77 | 69 | 74 | 53 | 103 |

TABLE 3.4 (continued)

| | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|-----|
| 185 | 40 | 43 | 47 | 61 | 51 | 44 | 41 | 42 | 51 | 39 | 101 |
| 186 | 45 | 42 | 47 | 61 | 49 | 43 | 39 | 40 | 50 | 39 | 102 |
| 187 | 43 | 46 | 53 | 66 | 56 | 54 | 50 | 48 | 55 | 44 | 105 |
| 188 | 49 | 47 | 53 | 67 | 57 | 55 | 52 | 51 | 57 | 46 | 109 |
| 189 | 43 | 46 | 55 | 67 | 57 | 60 | 59 | 58 | 67 | 45 | 105 |
| 190 | 44 | 47 | 55 | 65 | 57 | 62 | 60 | 58 | 59 | 46 | 105 |
| 191 | 45 | 45 | 55 | 67 | 59 | 61 | 59 | 57 | 64 | 47 | 108 |
| 192 | 42 | 48 | 58 | 69 | 61 | 68 | 66 | 63 | 64 | 50 | 107 |
| 193 | 44 | 45 | 54 | 62 | 53 | 59 | 56 | 54 | 63 | 45 | 95 |
| 194 | 48 | 46 | 55 | 65 | 57 | 62 | 60 | 57 | 65 | 47 | 97 |
| 195 | 55 | 49 | 61 | 70 | 62 | 70 | 68 | 65 | 72 | 55 | 100 |
| 196 | 40 | 54 | 63 | 75 | 66 | 68 | 67 | 67 | 74 | 55 | 103 |
| 197 | 31 | 40 | 47 | 60 | 49 | 46 | 46 | 49 | 63 | 43 | 92 |
| 198 | 41 | 41 | 46 | 59 | 47 | 47 | 47 | 50 | 56 | 42 | 92 |
| 199 | 40 | 47 | 57 | 70 | 61 | 62 | 65 | 69 | 79 | 57 | 100 |
| 200 | 42 | 48 | 54 | 67 | 58 | 60 | 62 | 65 | 77 | 56 | 100 |
| 201 | 49 | 45 | 50 | 62 | 52 | 54 | 57 | 61 | 65 | 47 | 98 |
| 202 | 48 | 46 | 52 | 65 | 56 | 56 | 59 | 63 | 67 | 52 | 100 |
| 203 | 38 | 46 | 52 | 64 | 55 | 61 | 67 | 72 | 73 | 53 | 100 |
| 204 | 40 | 45 | 50 | 62 | 53 | 58 | 62 | 68 | 74 | 53 | 100 |
| 205 | 44 | 45 | 55 | 64 | 55 | 67 | 70 | 70 | 66 | 48 | 103 |
| 206 | 49 | 45 | 54 | 63 | 54 | 64 | 66 | 67 | 65 | 48 | 105 |
| 207 | 48 | 45 | 54 | 63 | 55 | 62 | 62 | 62 | 67 | 50 | 104 |
| 208 | 41 | 46 | 56 | 65 | 56 | 67 | 69 | 67 | 66 | 49 | 102 |
| 209 | 46 | 50 | 58 | 69 | 61 | 66 | 67 | 68 | 78 | 55 | 108 |
| 210 | 52 | 48 | 59 | 69 | 61 | 67 | 67 | 68 | 78 | 54 | 106 |
| 211 | 42 | 49 | 57 | 69 | 60 | 61 | 61 | 63 | 76 | 55 | 106 |
| 212 | 47 | 50 | 60 | 71 | 62 | 66 | 66 | 66 | 77 | 58 | 107 |
| 213 | 49 | 48 | 61 | 72 | 62 | 64 | 62 | 65 | 74 | 52 | 121 |
| 214 | 43 | 47 | 60 | 70 | 60 | 63 | 61 | 62 | 73 | 51 | 114 |
| 215 | 47 | 48 | 62 | 73 | 62 | 64 | 61 | 64 | 72 | 52 | 116 |
| 216 | 46 | 49 | 62 | 71 | 61 | 66 | 64 | 64 | 74 | 49 | 115 |
| 217 | 40 | 50 | 63 | 73 | 63 | 71 | 70 | 70 | 77 | 54 | 108 |
| 218 | 50 | 51 | 65 | 73 | 63 | 78 | 81 | 82 | 80 | 58 | 110 |
| 219 | 51 | 51 | 63 | 72 | 63 | 71 | 71 | 72 | 76 | 57 | 112 |
| 220 | 39 | 49 | 59 | 68 | 57 | 66 | 69 | 73 | 77 | 52 | 108 |
| 221 | 45 | 48 | 55 | 67 | 58 | 66 | 73 | 78 | 82 | 57 | 112 |
| 222 | 49 | 46 | 53 | 65 | 54 | 62 | 69 | 76 | 81 | 56 | 105 |
| 223 | 47 | 46 | 53 | 63 | 54 | 62 | 69 | 74 | 82 | 52 | 106 |
| 224 | 47 | 46 | 54 | 64 | 54 | 62 | 67 | 73 | 77 | 53 | 104 |
| 225 | 45 | 47 | 55 | 66 | 55 | 53 | 53 | 59 | 79 | 56 | 136 |
| 226 | 47 | 45 | 55 | 67 | 55 | 54 | 55 | 60 | 77 | 56 | 133 |
| 227 | 40 | 45 | 53 | 66 | 54 | 51 | 51 | 59 | 77 | 54 | 137 |
| 228 | 41 | 46 | 53 | 66 | 53 | 51 | 50 | 57 | 81 | 54 | 135 |
| 229 | 46 | 44 | 55 | 66 | 56 | 53 | 49 | 49 | 58 | 45 | 112 |
| 230 | 39 | 46 | 56 | 68 | 58 | 53 | 48 | 49 | 64 | 48 | 115 |
| 231 | 44 | 48 | 60 | 73 | 63 | 63 | 60 | 61 | 71 | 51 | 113 |
| 232 | 44 | 48 | 59 | 71 | 62 | 58 | 53 | 55 | 77 | 53 | 119 |
| 233 | 43 | 44 | 53 | 65 | 54 | 55 | 55 | 60 | 71 | 53 | 122 |
| 234 | 44 | 46 | 55 | 66 | 55 | 59 | 58 | 62 | 78 | 54 | 122 |
| 235 | 42 | 44 | 54 | 67 | 54 | 55 | 56 | 61 | 74 | 53 | 124 |
| 236 | 39 | 45 | 54 | 66 | 54 | 55 | 56 | 62 | 74 | 54 | 122 |
| 237 | 41 | 49 | 58 | 70 | 59 | 61 | 65 | 70 | 71 | 56 | 114 |
| 238 | 35 | 46 | 57 | 67 | 56 | 61 | 65 | 72 | 76 | 54 | 113 |
| 239 | 50 | 48 | 59 | 70 | 59 | 62 | 67 | 73 | 80 | 55 | 116 |
| 240 | 44 | 45 | 55 | 65 | 53 | 59 | 65 | 72 | 77 | 52 | 114 |
| 241 | 54 | 52 | 57 | 65 | 61 | 77 | 78 | 73 | 78 | 52 | 105 |
| 242 | 56 | 50 | 57 | 65 | 62 | 79 | 79 | 72 | 76 | 53 | 103 |
| 243 | 55 | 52 | 57 | 66 | 62 | 82 | 84 | 78 | 83 | 56 | 103 |
| 244 | 55 | 52 | 58 | 67 | 63 | 82 | 83 | 77 | 85 | 55 | 103 |

TABLE 3.7

Radiometrically calibrated ATM sample data from CRYM386

| SAMPLE SITE | CAL1 | CAL2 | CAL3 | CAL4 | CAL5 | CAL6 | CAL7 | CAL8 | CAL9 | CAL10 | UNCAL11 |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| 1 | 4.6608 | 9.5324 | 14.0110 | 12.0056 | 12.9629 | 38.9655 | 51.1731 | 39.7171 | 5.57434 | 0.659298 | 124 |
| 2 | 7.4272 | 9.8698 | 13.5917 | 12.0056 | 12.9629 | 37.3147 | 48.4289 | 38.3409 | 4.85162 | 0.659298 | 126 |
| 3 | 7.7039 | 9.1951 | 13.5917 | 11.6115 | 12.5708 | 35.6639 | 46.5995 | 37.6528 | 5.39366 | 0.593718 | 126 |
| 4 | 7.7039 | 9.5324 | 13.5917 | 11.6115 | 12.5708 | 36.4893 | 46.5995 | 36.9647 | 4.76128 | 0.593718 | 126 |
| 5 | 7.9805 | 9.5324 | 14.8496 | 12.7937 | 14.5315 | 35.6639 | 40.1965 | 27.3313 | 3.85788 | 0.549998 | 112 |
| 6 | 6.0440 | 10.2072 | 15.2689 | 13.5819 | 15.3158 | 35.6639 | 39.2817 | 27.3313 | 4.39992 | 0.615578 | 115 |
| 7 | 7.4272 | 10.8819 | 16.9460 | 15.5524 | 17.2766 | 43.9179 | 50.2584 | 35.5885 | 5.03230 | 0.681158 | 113 |
| 8 | 7.4272 | 10.8819 | 16.5267 | 14.7642 | 16.8844 | 39.7909 | 43.8553 | 31.4599 | 5.57434 | 0.724878 | 119 |
| 9 | 4.6608 | 7.8456 | 9.8181 | 9.6410 | 10.6100 | 16.6797 | 19.1579 | 14.9455 | 2.23176 | 0.331398 | 137 |
| 10 | 5.2141 | 8.5204 | 10.6567 | 10.4292 | 11.0022 | 20.8067 | 21.9021 | 17.0098 | 2.41244 | 0.375118 | 130 |
| 11 | 6.0440 | 8.1830 | 10.6567 | 10.4292 | 11.0022 | 19.9813 | 21.9021 | 16.3217 | 2.68346 | 0.396978 | 132 |
| 12 | 6.3207 | 8.8577 | 12.3338 | 12.0056 | 12.5708 | 25.7591 | 30.1345 | 22.5146 | 3.13516 | 0.484418 | 125 |
| 13 | 7.4272 | 10.2072 | 14.8496 | 14.3701 | 14.9237 | 34.8385 | 43.8553 | 35.5885 | 5.12264 | 0.724878 | 123 |
| 14 | 6.3207 | 10.8819 | 16.1074 | 15.5524 | 16.4923 | 36.4893 | 43.8553 | 34.2123 | 5.48400 | 0.834178 | 123 |
| 15 | 6.8740 | 10.2072 | 15.2689 | 14.3701 | 16.1001 | 34.8385 | 42.9406 | 33.5242 | 4.76128 | 0.768598 | 124 |
| 16 | 7.4272 | 10.8819 | 15.2689 | 15.1583 | 16.4923 | 39.7909 | 48.4289 | 36.9647 | 5.39366 | 0.921618 | 121 |
| 17 | 6.0440 | 9.1951 | 14.0110 | 12.3996 | 13.3551 | 32.3623 | 42.0259 | 33.5242 | 5.03230 | 0.681158 | 119 |
| 18 | 5.7674 | 9.5324 | 14.0110 | 12.3996 | 13.3551 | 34.0131 | 43.8553 | 34.9004 | 5.12264 | 0.659298 | 113 |
| 19 | 5.7674 | 9.1951 | 13.1724 | 11.6115 | 12.5708 | 30.7115 | 39.2817 | 31.4599 | 4.49026 | 0.637438 | 123 |
| 20 | 7.1506 | 8.8577 | 13.5917 | 12.3996 | 12.9629 | 31.5369 | 40.1965 | 32.1480 | 4.58060 | 0.637438 | 118 |
| 21 | 4.9375 | 8.5204 | 11.4953 | 10.8233 | 11.3943 | 23.2829 | 28.3051 | 23.2027 | 3.85788 | 0.593718 | 119 |
| 22 | 3.2776 | 8.1830 | 11.0760 | 10.4292 | 11.0022 | 20.8067 | 24.6462 | 19.7622 | 3.94822 | 0.528138 | 113 |
| 23 | 3.8309 | 8.8577 | 11.4953 | 10.8233 | 11.3943 | 21.6321 | 25.5609 | 19.0741 | 4.03856 | 0.593718 | 116 |
| 24 | 5.4908 | 8.8577 | 12.3338 | 11.6115 | 12.5708 | 24.1083 | 28.3051 | 21.8265 | 4.39992 | 0.615578 | 117 |
| 25 | 7.1506 | 8.8577 | 13.5917 | 11.6115 | 12.9629 | 40.6163 | 53.0025 | 41.0933 | 5.75502 | 0.724878 | 108 |
| 26 | 6.0440 | 8.1830 | 13.5917 | 11.2174 | 12.9629 | 39.7909 | 49.3437 | 36.2766 | 5.21298 | 0.637438 | 110 |
| 27 | 7.1506 | 9.1951 | 14.8496 | 12.3996 | 13.7472 | 44.7433 | 57.5761 | 43.8457 | 5.93570 | 0.724878 | 107 |
| 28 | 7.7039 | 9.5324 | 14.0110 | 11.6115 | 12.9629 | 41.4417 | 53.0025 | 41.0933 | 5.48400 | 0.703018 | 107 |
| 29 | 6.5973 | 8.1830 | 11.4953 | 11.6115 | 13.3551 | 25.7591 | 29.2198 | 21.1384 | 3.76754 | 0.571858 | 111 |
| 30 | 4.6608 | 8.5204 | 12.3338 | 12.3996 | 14.1394 | 29.0607 | 33.7934 | 23.8908 | 4.12890 | 0.681158 | 108 |
| 31 | 5.7674 | 8.5204 | 11.9145 | 12.3996 | 14.1394 | 26.5845 | 30.1345 | 22.5146 | 3.76754 | 0.637438 | 112 |
| 32 | 5.7674 | 8.5204 | 11.9145 | 12.0056 | 14.1394 | 27.4099 | 31.0493 | 22.5146 | 3.94822 | 0.659298 | 112 |
| 33 | 10.7469 | 14.2555 | 21.9775 | 17.9169 | 21.1981 | 61.2513 | 68.5528 | 45.2219 | 6.02604 | 0.877898 | 114 |
| 34 | 11.3002 | 14.2555 | 22.3968 | 17.9169 | 21.9802 | 64.5529 | 73.1264 | 47.2862 | 6.20672 | 0.899758 | 112 |
| 35 | 10.4703 | 14.5928 | 22.3968 | 18.7051 | 21.9802 | 62.0767 | 70.3822 | 45.2219 | 6.29706 | 0.877898 | 113 |
| 36 | 11.8535 | 14.5928 | 21.5582 | 17.9169 | 21.9802 | 62.0767 | 72.2117 | 47.9743 | 6.38740 | 0.899758 | 111 |
| 37 | 9.3637 | 12.9060 | 19.8811 | 16.7346 | 18.0609 | 52.9973 | 63.0645 | 42.4695 | 5.93570 | 0.921618 | 115 |
| 38 | 9.9170 | 12.9060 | 19.4618 | 16.3405 | 19.6295 | 56.2989 | 63.0645 | 42.4695 | 6.38740 | 0.965338 | 117 |
| 39 | 8.8104 | 11.5566 | 17.7846 | 14.7642 | 18.0609 | 52.9973 | 60.3203 | 41.0933 | 6.38740 | 0.834178 | 115 |
| 40 | 10.1936 | 12.5687 | 19.8811 | 16.3405 | 19.6295 | 59.6005 | 66.7233 | 43.8457 | 6.47774 | 0.921618 | 114 |
| 41 | 10.1936 | 12.5687 | 19.8811 | 16.3405 | 19.6295 | 59.6005 | 66.7233 | 43.8457 | 6.47774 | 0.921618 | 126 |
| 42 | 6.5973 | 10.8819 | 16.5267 | 13.1878 | 16.4923 | 50.5211 | 57.5761 | 39.0290 | 6.11638 | 0.768598 | 123 |
| 43 | 7.7039 | 10.8819 | 16.5267 | 13.5819 | 16.4923 | 51.3465 | 60.3203 | 41.0933 | 6.29706 | 0.856038 | 133 |
| 44 | 7.1506 | 11.5566 | 18.2039 | 15.1583 | 18.0609 | 55.4735 | 62.1497 | 42.4695 | 5.84536 | 0.834178 | 128 |
| 45 | 10.7469 | 14.2555 | 19.0425 | 16.7346 | 17.2766 | 53.8227 | 62.1497 | 42.4695 | 6.29706 | 0.899758 | 113 |
| 46 | 10.7469 | 13.2434 | 18.6232 | 16.7346 | 20.4138 | 53.8227 | 61.2350 | 39.0290 | 6.47774 | 0.899758 | 115 |
| 47 | 9.0871 | 14.2555 | 19.8811 | 16.7346 | 21.1981 | 57.9497 | 58.4909 | 39.0290 | 6.29706 | 0.899758 | 115 |
| 48 | 9.9170 | 14.2555 | 19.0425 | 16.3405 | 21.1981 | 57.9497 | 65.8086 | 43.1576 | 6.29706 | 0.943478 | 115 |
| 49 | 7.7039 | 10.2072 | 13.1724 | 12.3996 | 14.9237 | 34.8385 | 36.5376 | 23.2027 | 6.29706 | 0.921618 | 116 |
| 50 | 6.8740 | 10.2072 | 12.7531 | 12.0056 | 14.5315 | 33.1877 | 35.6229 | 23.2027 | 4.85162 | 0.681158 | 123 |
| 51 | 8.5338 | 10.5445 | 13.5917 | 12.3996 | 14.9237 | 35.6639 | 37.4523 | 24.5789 | 4.49026 | 0.659298 | 128 |
| 52 | 8.5338 | 10.2072 | 13.1724 | 12.3996 | 14.5315 | 34.8385 | 36.5376 | 23.8908 | 4.49026 | 0.659298 | 121 |
| 53 | 7.9805 | 10.5445 | 13.5917 | 12.3996 | 14.5315 | 34.8385 | 36.5376 | 23.8908 | 4.94196 | 0.703018 | 124 |
| 54 | 9.9170 | 10.2072 | 12.7531 | 11.6115 | 14.1394 | 30.7115 | 32.8787 | 21.8265 | 4.67094 | 0.703018 | 123 |
| 55 | 9.3637 | 10.2072 | 13.1724 | 12.0056 | 14.1394 | 31.5369 | 31.9640 | 20.4503 | 4.39992 | 0.659298 | 125 |
| 56 | 8.2572 | 10.2072 | 13.1724 | 12.0056 | 14.1394 | 32.3623 | 33.7934 | 21.8265 | 4.12890 | 0.681158 | 124 |
| 57 | 8.5338 | 11.8940 | 17.3653 | 15.1583 | 17.6687 | 31.5369 | 32.8787 | 21.8265 | 5.03230 | 0.724878 | 109 |
| 58 | 9.6404 | 11.8940 | 17.3653 | 15.1583 | 18.0609 | 44.7433 | 48.4289 | 31.4599 | 5.57434 | 0.724878 | 110 |
| 59 | 10.4703 | 12.5687 | 18.2039 | 15.9465 | 18.8452 | 46.3941 | 49.3437 | 32.1480 | 5.21298 | 0.746738 | 107 |
| 60 | 10.1936 | 11.5566 | 16.9460 | 15.1583 | 17.6687 | 42.2671 | 44.7701 | 29.3956 | 4.94196 | 0.724878 | 109 |

TABLE 3.7 (continued)

| | | | | | | | | | | | |
|----|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----|
| 16 | 1.4272 | 10.8819 | 14.4303 | 13.5819 | 15.7080 | 31.5369 | 32.8787 | 22.5146 | 4.49026 | 0.746738 | 124 |
| 16 | 7.1506 | 9.8698 | 13.1724 | 13.1878 | 14.9237 | 29.0607 | 31.0493 | 20.4503 | 4.67094 | 0.746738 | 124 |
| 16 | 6.3207 | 10.2072 | 14.0110 | 13.1878 | 15.3158 | 33.1877 | 34.7081 | 23.8908 | 5.03230 | 0.746738 | 126 |
| 16 | 7.9805 | 10.5445 | 14.0110 | 13.1878 | 15.3158 | 31.5369 | 32.8787 | 22.5146 | 4.94196 | 0.746738 | 122 |
| 17 | 6.8740 | 8.5204 | 11.9145 | 11.2174 | 13.3551 | 31.5369 | 33.7934 | 21.8265 | 4.21924 | 0.615578 | 119 |
| 17 | 5.2141 | 8.8577 | 11.4953 | 10.4292 | 12.5708 | 32.3623 | 35.6229 | 23.2027 | 3.85788 | 0.571858 | 120 |
| 17 | 6.3207 | 9.1951 | 11.9145 | 11.6115 | 12.9629 | 29.8861 | 32.8787 | 23.2027 | 4.12890 | 0.593718 | 117 |
| 17 | 7.1506 | 8.8577 | 11.9145 | 10.8233 | 12.9629 | 29.8861 | 32.8787 | 21.8265 | 4.03856 | 0.528138 | 115 |
| 18 | 7.7039 | 10.5445 | 14.8496 | 12.7937 | 14.1394 | 35.6639 | 43.8553 | 34.2123 | 5.75502 | 0.790458 | 136 |
| 18 | 8.2572 | 9.8698 | 14.8496 | 13.1878 | 14.1394 | 36.4893 | 45.6848 | 34.9004 | 5.57434 | 0.790458 | 133 |
| 18 | 6.3207 | 9.8698 | 14.0110 | 12.7937 | 13.7472 | 34.0131 | 42.0259 | 34.2123 | 5.57434 | 0.746738 | 137 |
| 18 | 6.5973 | 10.2072 | 14.0110 | 12.7937 | 13.3551 | 34.0131 | 41.1112 | 32.8361 | 5.93570 | 0.746738 | 135 |
| 19 | 7.1506 | 10.5445 | 14.8496 | 12.7937 | 13.7472 | 37.3147 | 45.6848 | 34.9004 | 5.03230 | 0.724878 | 122 |
| 19 | 7.4272 | 10.2072 | 14.8496 | 12.7937 | 14.1394 | 40.6163 | 48.4289 | 36.2766 | 5.66468 | 0.746738 | 122 |
| 19 | 6.8740 | 9.5324 | 14.4303 | 13.1878 | 13.7472 | 37.3147 | 46.5995 | 35.5885 | 5.30332 | 0.724878 | 124 |
| 19 | 6.0440 | 9.8698 | 14.4303 | 12.7937 | 13.7472 | 37.3147 | 46.5995 | 36.2766 | 5.30332 | 0.746738 | 122 |
| 20 | 8.8104 | 10.5445 | 14.4303 | 12.7937 | 14.9237 | 32.3623 | 35.6229 | 24.5789 | 4.85162 | 0.724878 | 121 |
| 20 | 6.0440 | 11.2192 | 15.6882 | 14.7642 | 16.4923 | 35.6639 | 39.2817 | 27.3313 | 5.21298 | 0.790458 | 124 |
| 20 | 5.4908 | 11.2192 | 15.6882 | 13.5819 | 16.4923 | 35.6639 | 38.3670 | 26.6432 | 5.57434 | 0.856038 | 127 |
| 20 | 8.2572 | 11.2192 | 15.6882 | 14.7642 | 16.4923 | 36.4893 | 41.1112 | 28.7075 | 5.03230 | 0.812318 | 125 |
| 21 | 8.5338 | 11.2192 | 16.1074 | 13.9760 | 16.8844 | 41.4417 | 45.6848 | 31.4599 | 5.57434 | 0.856038 | 123 |
| 21 | 8.2572 | 10.8819 | 15.2689 | 13.9760 | 15.7080 | 37.3147 | 42.0259 | 29.3956 | 5.57434 | 0.834178 | 124 |
| 21 | 7.1506 | 9.5324 | 13.1724 | 11.6115 | 13.7472 | 32.3623 | 35.6229 | 25.9551 | 4.85162 | 0.681158 | 121 |
| 21 | 7.1506 | 10.5445 | 14.8496 | 13.1878 | 15.7080 | 34.8385 | 38.3670 | 25.9551 | 4.67094 | 0.681158 | 125 |
| 22 | 6.0440 | 10.5445 | 14.4303 | 13.5819 | 16.8844 | 38.1401 | 39.2817 | 24.5789 | 4.94196 | 0.768598 | 119 |
| 22 | 8.8104 | 10.5445 | 14.4303 | 13.9760 | 17.2766 | 39.7909 | 41.1112 | 24.5789 | 4.94196 | 0.790458 | 117 |
| 22 | 8.8104 | 10.5445 | 14.4303 | 13.9760 | 16.8844 | 37.3147 | 40.1965 | 25.2670 | 4.94196 | 0.768598 | 119 |
| 22 | 8.2572 | 10.5445 | 14.0110 | 13.5819 | 17.2766 | 38.1401 | 40.1965 | 25.2670 | 5.48400 | 0.768598 | 117 |
| 23 | 6.3207 | 10.8819 | 14.4303 | 13.1878 | 15.7080 | 37.3147 | 40.1965 | 26.6432 | 4.94196 | 0.703018 | 119 |
| 23 | 8.8104 | 10.8819 | 14.4303 | 12.7937 | 15.7080 | 37.3147 | 40.1965 | 26.6432 | 4.76128 | 0.703018 | 121 |
| 23 | 9.9170 | 10.8819 | 14.8496 | 13.9760 | 16.4923 | 37.3147 | 40.1965 | 26.6432 | 5.48400 | 0.746738 | 122 |
| 23 | 7.7039 | 10.8819 | 14.4303 | 13.1878 | 16.1001 | 36.4893 | 40.1965 | 26.6432 | 5.48400 | 0.768598 | 113 |
| 24 | 8.2572 | 11.5566 | 15.6882 | 13.9760 | 16.8844 | 43.9179 | 48.4289 | 32.1480 | 5.57434 | 0.724878 | 114 |
| 24 | 7.1506 | 10.8819 | 15.6882 | 13.9760 | 16.4923 | 42.2671 | 46.5995 | 30.7718 | 5.57434 | 0.703018 | 117 |
| 24 | 9.0871 | 11.2192 | 15.2689 | 13.5819 | 16.4923 | 43.0925 | 47.5142 | 31.4599 | 4.85162 | 0.724878 | 115 |
| 24 | 8.5338 | 11.5566 | 15.6882 | 13.5819 | 16.8844 | 43.0925 | 47.5142 | 30.7718 | 5.39366 | 0.812318 | 124 |
| 25 | 9.3637 | 11.8940 | 17.3653 | 14.7642 | 17.6687 | 46.3941 | 50.2584 | 32.8361 | 5.84536 | 0.834178 | 124 |
| 25 | 8.2572 | 11.2192 | 16.5267 | 13.9760 | 17.6687 | 44.7433 | 49.3437 | 33.5242 | 5.93570 | 0.856038 | 123 |
| 25 | 7.7039 | 11.8940 | 17.3653 | 15.1583 | 18.0609 | 48.0449 | 52.0878 | 34.2123 | 5.75502 | 0.834178 | 123 |
| 26 | 8.2572 | 12.5687 | 17.3653 | 15.1583 | 17.6687 | 49.6957 | 56.6614 | 36.9647 | 5.57434 | 0.812318 | 119 |
| 26 | 9.9170 | 12.5687 | 17.7846 | 14.7642 | 17.2766 | 48.8703 | 56.6614 | 36.9647 | 5.21298 | 0.768598 | 111 |
| 26 | 8.5338 | 12.2313 | 17.3653 | 15.1583 | 18.0609 | 46.3941 | 52.0878 | 34.9004 | 5.66468 | 0.834178 | 119 |
| 26 | 7.9805 | 12.5687 | 17.3653 | 14.7642 | 17.6687 | 48.0449 | 54.8320 | 36.2766 | 5.12264 | 0.724878 | 112 |
| 27 | 10.4703 | 12.9060 | 17.7846 | 15.1583 | 18.4530 | 48.8703 | 55.7467 | 36.9647 | 5.21298 | 0.768598 | 114 |
| 27 | 9.3637 | 12.5687 | 16.9460 | 15.1583 | 17.6687 | 46.3941 | 53.0025 | 36.2766 | 5.12264 | 0.746738 | 116 |
| 27 | 7.7039 | 11.5566 | 16.5267 | 13.9760 | 17.2766 | 49.6957 | 55.7467 | 35.5885 | 5.12264 | 0.681158 | 113 |
| 27 | 8.8104 | 12.5687 | 18.2039 | 15.9465 | 18.4530 | 50.5211 | 58.4909 | 38.3409 | 5.66468 | 0.812318 | 117 |
| 28 | 11.0236 | 13.2434 | 19.8811 | 15.9465 | 19.6295 | 64.5529 | 74.9558 | 48.6624 | 5.84536 | 0.899758 | 105 |
| 28 | 9.3637 | 12.2313 | 17.3653 | 13.5819 | 17.2766 | 58.7751 | 68.5528 | 45.2219 | 5.75502 | 0.812318 | 103 |
| 28 | 9.3637 | 12.2313 | 17.3653 | 13.9760 | 18.0609 | 62.9021 | 73.1264 | 47.2862 | 6.11638 | 0.834178 | 102 |
| 29 | 6.0440 | 10.2072 | 15.2689 | 13.9760 | 17.2766 | 60.4259 | 70.3822 | 45.9100 | 6.65842 | 0.790458 | 99 |
| 29 | 8.2572 | 10.8819 | 15.6882 | 12.7937 | 15.7080 | 47.2195 | 52.0878 | 34.2123 | 5.30332 | 0.681158 | 114 |
| 29 | 10.1936 | 10.8819 | 15.6882 | 13.1878 | 16.1001 | 49.6957 | 55.7467 | 36.2766 | 5.03230 | 0.703018 | 110 |
| 29 | 7.7039 | 10.8819 | 15.6882 | 13.1878 | 16.1001 | 49.6957 | 55.7467 | 36.9647 | 5.57434 | 0.724878 | 115 |
| 30 | 9.6404 | 10.8819 | 16.9460 | 13.5819 | 16.1001 | 48.8703 | 55.7467 | 36.2766 | 5.03230 | 0.724878 | 115 |
| 30 | 6.5973 | 9.1951 | 14.0110 | 11.2174 | 14.1394 | 42.2671 | 47.5142 | 31.4599 | 4.30958 | 0.681158 | 111 |
| 30 | 7.7039 | 11.5566 | 17.3653 | 13.9760 | 17.2766 | 54.6481 | 61.2350 | 38.3409 | 4.94196 | 0.571858 | 102 |
| 30 | 7.7039 | 10.5445 | 16.5267 | 13.5819 | 16.1001 | 48.0449 | 53.9173 | 36.2766 | 4.76128 | 0.637438 | 106 |
| 31 | 8.2572 | 10.2072 | 14.4303 | 11.6115 | 14.9237 | 43.0925 | 47.5142 | 30.7718 | 4.12890 | 0.571858 | 108 |
| 31 | 7.1506 | 10.2072 | 14.8496 | 12.7937 | 14.9237 | 43.9179 | 49.3437 | 32.1480 | 4.12890 | 0.571858 | 108 |
| 31 | 7.9805 | 10.8819 | 15.6882 | 12.7937 | 14.9237 | 44.7433 | 47.5142 | 32.1480 | 4.76128 | 0.637438 | 111 |
| 31 | 7.7039 | 10.8819 | 15.6882 | 13.5819 | 16.1001 | 44.7433 | 47.5142 | 30.0837 | 4.58060 | 0.615578 | 113 |
| 32 | 8.2572 | 11.2192 | 16.9460 | 13.5819 | 17.2766 | 50.5211 | 55.7467 | 35.5885 | 4.76128 | 0.659298 | 115 |
| 32 | 9.0871 | 11.8940 | 16.1074 | 13.1878 | 16.1001 | 48.8703 | 56.6614 | 36.9647 | 4.94196 | 0.703018 | 104 |
| 32 | 9.0871 | 11.8940 | 16.9460 | 13.5819 | 16.8844 | 52.1719 | 58.4909 | 37.6528 | 4.76128 | 0.703018 | 103 |

TABLE 3.7 (continued)

| | | | | | | | | | | | |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----|
| 127 | 10.7469 | 11.5566 | 17.3653 | 14.3701 | 17.2766 | 53.8227 | 62.1497 | 40.4052 | 5.30332 | 0.703018 | 105 |
| 128 | 9.0871 | 12.2313 | 17.3653 | 13.9760 | 17.2766 | 52.9973 | 61.2350 | 40.4052 | 5.30332 | 0.724878 | 104 |
| 129 | 5.7674 | 10.8819 | 14.8496 | 13.1878 | 13.7472 | 35.6639 | 49.3437 | 41.7814 | 5.57434 | 0.681158 | 115 |
| 130 | 8.5338 | 10.8819 | 15.2689 | 13.5819 | 14.1394 | 36.4893 | 46.5995 | 36.9647 | 5.66468 | 0.724878 | 123 |
| 131 | 6.0440 | 10.8819 | 15.2689 | 13.1878 | 14.1394 | 37.3147 | 46.5995 | 36.2766 | 5.21298 | 0.659298 | 120 |
| 132 | 4.6608 | 11.8940 | 16.9460 | 14.7642 | 15.7080 | 40.6163 | 50.2584 | 39.0290 | 5.48400 | 0.768598 | 131 |
| 133 | 7.4272 | 10.2072 | 15.2689 | 12.7937 | 14.1394 | 42.2671 | 55.7467 | 42.4695 | 5.03230 | 0.659298 | 95 |
| 134 | 7.7039 | 10.2072 | 15.2689 | 12.7937 | 13.7472 | 41.4417 | 54.8320 | 42.4695 | 5.57434 | 0.681158 | 96 |
| 135 | 9.0871 | 10.5445 | 15.2689 | 12.7937 | 14.1394 | 42.2671 | 55.7467 | 42.4695 | 5.48400 | 0.659298 | 99 |
| 136 | 5.2141 | 9.8698 | 15.6882 | 13.1878 | 14.1394 | 42.2671 | 56.6614 | 43.1576 | 5.48400 | 0.659298 | 99 |
| 137 | 5.7674 | 11.2192 | 18.6232 | 17.1287 | 18.0609 | 42.2671 | 52.0878 | 41.0933 | 5.75502 | 0.790458 | 109 |
| 138 | 7.9805 | 11.2192 | 18.2039 | 16.7346 | 17.6687 | 43.0925 | 53.0025 | 42.4695 | 5.75502 | 0.768598 | 107 |
| 139 | 5.4908 | 11.2192 | 17.3653 | 16.3405 | 17.2766 | 38.1401 | 47.5142 | 37.6528 | 5.30332 | 0.768598 | 122 |
| 140 | 7.4272 | 10.8819 | 17.3653 | 15.9465 | 16.8844 | 39.7909 | 49.3437 | 39.0290 | 5.39366 | 0.724878 | 110 |
| 141 | 4.1076 | 9.8698 | 14.0110 | 13.5819 | 14.1394 | 28.2353 | 36.5376 | 30.7718 | 4.30958 | 0.659298 | 122 |
| 142 | 5.7674 | 10.2072 | 14.0110 | 13.5819 | 14.5315 | 28.2353 | 35.6229 | 30.7718 | 4.67094 | 0.724878 | 120 |
| 143 | 3.5543 | 9.1951 | 14.0110 | 13.9760 | 14.5315 | 27.4099 | 35.6229 | 30.7718 | 4.39992 | 0.703018 | 128 |
| 144 | 6.3207 | 9.5324 | 13.5917 | 13.5819 | 14.5315 | 25.7591 | 31.9640 | 28.0194 | 4.39992 | 0.768598 | 126 |
| 145 | 4.1076 | 9.5324 | 13.1724 | 14.3701 | 15.3158 | 28.2353 | 33.7934 | 29.3956 | 5.12264 | 0.834178 | 116 |
| 146 | 4.9375 | 8.8577 | 11.0760 | 12.0056 | 12.9629 | 22.4575 | 27.3904 | 23.8908 | 4.76128 | 0.681158 | 114 |
| 147 | 5.7674 | 9.5324 | 13.1724 | 14.3701 | 16.1001 | 28.2353 | 33.7934 | 28.0194 | 4.49026 | 0.899758 | 120 |
| 148 | 7.4272 | 9.1951 | 12.7531 | 13.9760 | 15.7080 | 28.2353 | 34.7081 | 30.7718 | 5.57434 | 0.965338 | 118 |
| 149 | 9.0871 | 13.2434 | 19.0425 | 17.9169 | 21.1981 | 40.6163 | 40.1965 | 24.5789 | 4.30958 | 0.768598 | 103 |
| 150 | 9.9170 | 12.2313 | 17.3653 | 15.9465 | 18.0452 | 40.6163 | 41.1112 | 25.9551 | 4.39992 | 0.724878 | 105 |
| 151 | 6.3207 | 12.2313 | 17.3653 | 17.1287 | 19.2373 | 34.8385 | 34.7081 | 21.1384 | 3.76754 | 0.703018 | 99 |
| 152 | 8.5338 | 12.9060 | 18.2039 | 17.5228 | 20.4138 | 37.3147 | 37.4523 | 23.2027 | 4.39992 | 0.724878 | 100 |
| 153 | 8.2572 | 10.5445 | 14.4303 | 11.6115 | 13.3551 | 34.8385 | 36.5376 | 25.2670 | 4.94196 | 0.593718 | 107 |
| 154 | 6.0440 | 9.5324 | 12.3338 | 10.0351 | 11.7865 | 28.2353 | 28.3051 | 18.3860 | 3.76754 | 0.440698 | 99 |
| 155 | 9.3637 | 11.8940 | 16.5267 | 13.9760 | 16.1001 | 37.3147 | 37.4523 | 23.2027 | 4.58060 | 0.724878 | 113 |
| 156 | 8.8104 | 11.2192 | 15.2689 | 13.1878 | 15.3158 | 34.8385 | 35.6229 | 22.5146 | 4.30958 | 0.659298 | 113 |
| 157 | 8.5338 | 11.8940 | 16.9460 | 14.3701 | 16.8844 | 35.6639 | 36.5376 | 22.5146 | 4.30958 | 0.681158 | 112 |
| 158 | 9.3637 | 12.9060 | 17.7846 | 15.5524 | 17.6687 | 36.4893 | 36.5376 | 22.5146 | 4.30958 | 0.724878 | 107 |
| 159 | 7.1506 | 11.5566 | 16.1074 | 13.5819 | 16.1001 | 33.1877 | 32.8787 | 21.1384 | 4.03856 | 0.659298 | 116 |
| 160 | 6.3207 | 12.2313 | 16.5267 | 13.9760 | 16.1001 | 34.8385 | 34.7081 | 21.1384 | 3.94822 | 0.659298 | 107 |
| 161 | 10.1936 | 13.5808 | 19.8811 | 16.7346 | 20.0216 | 49.6957 | 52.0878 | 32.8361 | 5.48400 | 0.856038 | 121 |
| 162 | 11.3002 | 14.2555 | 19.8811 | 17.1287 | 20.4138 | 49.6957 | 52.0878 | 32.8361 | 5.84536 | 0.877898 | 118 |
| 163 | 11.3002 | 12.5687 | 18.2039 | 15.5524 | 18.0452 | 45.5687 | 47.5142 | 30.0837 | 4.94196 | 0.768598 | 117 |
| 164 | 10.7469 | 12.9060 | 18.6232 | 15.5524 | 19.2373 | 48.8703 | 51.1731 | 31.4599 | 5.57434 | 0.790458 | 114 |
| 165 | 11.0236 | 13.9181 | 18.6232 | 15.1583 | 18.4530 | 43.9179 | 42.9406 | 25.2670 | 4.85162 | 0.681158 | 115 |
| 166 | 10.7469 | 13.9181 | 18.6232 | 14.7642 | 18.8452 | 45.5687 | 44.7701 | 25.9551 | 4.58060 | 0.659298 | 116 |
| 167 | 7.7039 | 13.9181 | 18.6232 | 15.1583 | 18.4530 | 45.5687 | 44.7701 | 25.9551 | 4.58060 | 0.703018 | 114 |
| 168 | 8.8104 | 13.9181 | 18.6232 | 14.7642 | 18.8452 | 47.2195 | 45.6848 | 26.6432 | 4.85162 | 0.724878 | 116 |
| 169 | 11.3002 | 15.2676 | 22.3968 | 19.0992 | 23.1588 | 56.2989 | 58.4909 | 35.5885 | 6.20672 | 0.921618 | 119 |
| 170 | 9.9170 | 15.6049 | 22.8161 | 19.4933 | 23.9431 | 57.1243 | 58.4909 | 34.9004 | 6.29706 | 0.943478 | 117 |
| 171 | 11.3002 | 15.6049 | 22.3968 | 19.0992 | 22.7667 | 56.2989 | 57.5761 | 34.9004 | 6.38740 | 0.899758 | 117 |
| 172 | 10.1936 | 15.9423 | 23.2354 | 19.4933 | 23.5510 | 57.1243 | 58.4909 | 34.9004 | 6.38740 | 0.877898 | 117 |
| 173 | 9.9170 | 13.9181 | 19.0425 | 16.7346 | 20.8059 | 50.5211 | 53.9173 | 32.8361 | 6.11638 | 0.899758 | 125 |
| 174 | 11.0236 | 13.9181 | 19.0425 | 16.7346 | 20.4138 | 51.3465 | 54.8320 | 33.5242 | 6.56808 | 0.899758 | 124 |
| 175 | 11.0236 | 13.5808 | 18.2039 | 15.9465 | 19.6295 | 48.8703 | 51.1731 | 31.4599 | 5.84536 | 0.856038 | 126 |
| 176 | 9.9170 | 13.9181 | 18.6232 | 16.3405 | 20.4138 | 50.5211 | 53.0025 | 32.1480 | 6.02604 | 0.856038 | 122 |
| 177 | 10.4703 | 12.2313 | 16.5267 | 14.3701 | 18.4530 | 48.8703 | 52.0878 | 32.8361 | 6.29706 | 0.790458 | 117 |
| 178 | 8.8104 | 12.5687 | 16.9460 | 14.7642 | 18.4530 | 48.8703 | 52.0878 | 32.1480 | 5.57434 | 0.790458 | 116 |
| 179 | 6.8740 | 12.5687 | 17.3653 | 15.1583 | 18.8452 | 48.8703 | 54.8320 | 34.2123 | 6.02604 | 0.856038 | 117 |
| 180 | 10.7469 | 12.9060 | 16.9460 | 14.7642 | 18.8452 | 50.5211 | 54.8320 | 32.8361 | 6.38740 | 0.856038 | 117 |
| 181 | 8.5338 | 12.5687 | 19.0425 | 15.1583 | 18.8452 | 48.0449 | 51.1731 | 32.8361 | 6.38740 | 0.834178 | 118 |
| 182 | 12.9600 | 12.2313 | 19.0425 | 15.1583 | 18.4530 | 53.8227 | 59.4056 | 37.6528 | 5.48400 | 0.724878 | 103 |
| 183 | 8.2572 | 11.8940 | 18.2039 | 14.7642 | 17.6687 | 52.9973 | 59.4056 | 38.3409 | 5.12264 | 0.724878 | 103 |
| 184 | 8.8104 | 11.8940 | 16.9460 | 13.5819 | 17.2766 | 52.9973 | 57.5761 | 34.9004 | 4.49026 | 0.659298 | 101 |
| 185 | 6.3207 | 9.1951 | 11.4953 | 10.8233 | 12.2766 | 57.1243 | 65.8086 | 41.0933 | 5.30332 | 0.724878 | 103 |
| 186 | 7.7039 | 8.6577 | 11.4953 | 10.8233 | 12.5708 | 28.2353 | 32.8787 | 22.5146 | 3.22550 | 0.418838 | 101 |
| 187 | 7.1506 | 10.2072 | 14.0110 | 12.7937 | 11.7865 | 27.4099 | 31.0493 | 21.1384 | 3.13516 | 0.418838 | 102 |
| 188 | 8.8104 | 10.5445 | 14.0110 | 13.1878 | 14.5315 | 36.4893 | 41.1112 | 26.6432 | 3.58686 | 0.528138 | 105 |
| 189 | 7.1506 | 10.2072 | 14.8496 | 13.1878 | 14.9237 | 37.3147 | 42.9406 | 28.7075 | 3.76754 | 0.571858 | 109 |
| 190 | 7.4272 | 10.5445 | 14.8496 | 13.1878 | 14.9237 | 41.4417 | 49.3437 | 33.5242 | 4.67094 | 0.549998 | 105 |
| 191 | 7.7039 | 9.8698 | 14.8496 | 12.3996 | 15.7080 | 43.0925 | 50.2584 | 33.5242 | 3.94822 | 0.571858 | 105 |
| 192 | 6.8740 | 10.8819 | 16.1074 | 13.9760 | 16.4923 | 48.0449 | 55.7467 | 36.9647 | 4.39992 | 0.659298 | 108 |
| 192 | 6.8740 | 10.8819 | 16.1074 | 13.9760 | 16.4923 | 48.0449 | 55.7467 | 36.9647 | 4.39992 | 0.659298 | 107 |

TABLE 3.7 (continued)

| | | | | | | | | | | | |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----|
| 193 | 7.4272 | 9.8698 | 14.4303 | 11.2174 | 13.3551 | 40.6163 | 46.5995 | 30.7718 | 4.30958 | 0.549998 | 95 |
| 194 | 8.5338 | 10.2072 | 14.8496 | 12.3996 | 14.9237 | 43.0925 | 50.2584 | 32.8361 | 4.49026 | 0.593718 | 97 |
| 195 | 10.4703 | 11.2192 | 17.3653 | 14.3701 | 16.8844 | 49.6957 | 57.5761 | 38.3409 | 5.12264 | 0.768598 | 100 |
| 196 | 6.3207 | 12.9060 | 18.2039 | 16.3405 | 18.4530 | 48.0449 | 56.6614 | 39.7171 | 5.30332 | 0.768598 | 103 |
| 197 | 3.8309 | 8.1830 | 11.4953 | 10.4292 | 11.7865 | 29.8861 | 37.4523 | 27.3313 | 4.30958 | 0.506278 | 92 |
| 198 | 6.5973 | 8.5204 | 11.0760 | 10.0351 | 11.0022 | 30.7115 | 38.3670 | 28.0194 | 3.67720 | 0.484418 | 92 |
| 199 | 6.3207 | 10.5445 | 15.6882 | 14.3701 | 16.4923 | 43.0925 | 54.8320 | 41.0933 | 5.75502 | 0.812318 | 100 |
| 200 | 6.8740 | 10.8819 | 14.4303 | 13.1878 | 15.3158 | 41.4417 | 52.0878 | 38.3409 | 5.57434 | 0.790458 | 100 |
| 201 | 8.8104 | 9.8698 | 12.7531 | 11.2174 | 12.9629 | 36.4893 | 47.5142 | 35.5885 | 4.49026 | 0.593718 | 98 |
| 202 | 8.5338 | 10.2072 | 13.5917 | 12.3996 | 14.5315 | 38.1401 | 49.3437 | 36.9647 | 4.67094 | 0.703018 | 100 |
| 203 | 5.7674 | 10.2072 | 13.5917 | 12.0056 | 14.1394 | 42.2671 | 56.6614 | 43.1576 | 5.21298 | 0.724878 | 100 |
| 204 | 6.3207 | 9.8698 | 12.7531 | 11.2174 | 13.3551 | 39.7909 | 52.0878 | 40.4052 | 5.30332 | 0.724878 | 100 |
| 205 | 7.4272 | 9.8698 | 14.8496 | 12.0056 | 14.1394 | 47.2195 | 59.4056 | 41.7814 | 4.58060 | 0.615578 | 103 |
| 206 | 8.8104 | 9.8698 | 14.4303 | 11.6115 | 13.7472 | 44.7433 | 55.7467 | 39.7171 | 4.49026 | 0.615578 | 105 |
| 207 | 8.5338 | 9.8698 | 14.4303 | 11.6115 | 14.1394 | 43.0925 | 52.0878 | 36.2766 | 4.67094 | 0.659298 | 104 |
| 208 | 6.5973 | 10.2072 | 15.2689 | 12.3996 | 16.4923 | 47.2195 | 58.4909 | 39.7171 | 4.58060 | 0.637438 | 102 |
| 209 | 7.9805 | 11.5566 | 16.1074 | 13.9760 | 16.4923 | 46.3941 | 56.6614 | 40.4052 | 5.66468 | 0.768598 | 108 |
| 210 | 9.6404 | 10.8819 | 16.5267 | 13.9760 | 16.4923 | 47.2195 | 56.6614 | 40.4052 | 5.66468 | 0.746738 | 106 |
| 211 | 6.8740 | 11.2192 | 15.6882 | 13.9760 | 16.1001 | 42.2671 | 51.1731 | 36.9647 | 5.48400 | 0.768598 | 106 |
| 212 | 8.2572 | 11.5566 | 16.9460 | 14.7642 | 16.8844 | 46.3941 | 55.7467 | 39.0290 | 5.57434 | 0.834178 | 107 |
| 213 | 8.8104 | 10.8819 | 17.3653 | 15.1583 | 16.8844 | 44.7433 | 52.0878 | 38.3409 | 5.30332 | 0.703018 | 121 |
| 214 | 7.1506 | 10.5445 | 16.9460 | 14.3701 | 16.1001 | 43.9179 | 51.1731 | 36.2766 | 5.21298 | 0.681158 | 114 |
| 215 | 8.2572 | 10.8819 | 17.7846 | 15.5524 | 16.8844 | 44.7433 | 51.1731 | 37.6528 | 5.12264 | 0.703018 | 116 |
| 216 | 7.9805 | 11.2192 | 17.7846 | 14.7642 | 16.4923 | 46.3941 | 53.9173 | 37.6528 | 5.30332 | 0.637438 | 115 |
| 217 | 6.3207 | 11.5566 | 18.2039 | 15.5524 | 17.2766 | 50.5211 | 59.4056 | 41.7814 | 5.57434 | 0.746738 | 108 |
| 218 | 9.0871 | 11.8940 | 19.0425 | 15.5524 | 17.2766 | 56.2989 | 69.4675 | 50.0386 | 5.84536 | 0.834178 | 110 |
| 219 | 9.3637 | 11.8940 | 18.2039 | 15.1583 | 17.2766 | 50.5211 | 60.3203 | 43.1576 | 5.48400 | 0.812318 | 112 |
| 220 | 6.0440 | 11.2192 | 16.5267 | 13.5819 | 14.9237 | 46.3941 | 58.4909 | 43.8457 | 5.57434 | 0.703018 | 108 |
| 221 | 7.7039 | 10.8819 | 14.8496 | 13.1878 | 15.3158 | 46.3941 | 62.1497 | 47.2862 | 6.02604 | 0.812318 | 112 |
| 222 | 8.8104 | 10.2072 | 14.0110 | 12.3996 | 13.7472 | 43.0925 | 58.4909 | 45.9100 | 5.93570 | 0.790458 | 105 |
| 223 | 8.2572 | 10.2072 | 14.0110 | 11.6115 | 13.7472 | 43.0925 | 58.4909 | 44.5338 | 6.02604 | 0.703018 | 106 |
| 224 | 8.2572 | 10.2072 | 14.4303 | 12.0056 | 13.7472 | 43.0925 | 56.6614 | 43.8457 | 5.57434 | 0.724878 | 104 |
| 225 | 7.7039 | 10.5445 | 14.8496 | 12.7937 | 14.1394 | 35.6639 | 43.8553 | 34.2123 | 5.75502 | 0.790458 | 136 |
| 226 | 8.2572 | 9.8698 | 14.8496 | 13.1878 | 14.1394 | 36.4893 | 45.6848 | 34.9004 | 5.57434 | 0.790458 | 133 |
| 227 | 6.3207 | 9.8698 | 14.0110 | 12.7937 | 13.7472 | 34.0131 | 42.0259 | 34.2123 | 5.57434 | 0.746738 | 137 |
| 228 | 6.5973 | 10.2072 | 14.0110 | 12.7937 | 13.3551 | 34.0131 | 41.1112 | 32.8361 | 5.93570 | 0.746738 | 135 |
| 229 | 7.9805 | 9.5324 | 14.8496 | 12.7937 | 14.5315 | 35.6639 | 40.1965 | 27.3313 | 3.85788 | 0.549998 | 112 |
| 230 | 6.0440 | 10.2072 | 15.2689 | 13.5819 | 15.3158 | 35.6639 | 39.2817 | 27.3313 | 4.39992 | 0.615578 | 115 |
| 231 | 7.4272 | 10.8819 | 16.9460 | 15.5524 | 17.2766 | 43.9179 | 50.2584 | 35.5885 | 5.03230 | 0.681158 | 113 |
| 232 | 7.4272 | 10.8819 | 16.5267 | 14.7642 | 16.8844 | 39.7909 | 43.8553 | 31.4599 | 5.57434 | 0.724878 | 119 |
| 233 | 7.1506 | 9.5324 | 14.0110 | 12.3996 | 13.7472 | 37.3147 | 45.6848 | 34.9004 | 5.03230 | 0.724878 | 122 |
| 234 | 7.4272 | 10.2072 | 14.8496 | 12.7937 | 14.1394 | 40.6163 | 48.4289 | 36.2766 | 5.66468 | 0.746738 | 122 |
| 235 | 6.8740 | 9.5324 | 14.4303 | 13.1878 | 13.7472 | 37.3147 | 46.5995 | 35.5885 | 5.30332 | 0.724878 | 124 |
| 236 | 6.0440 | 9.8698 | 14.4303 | 12.7937 | 13.7472 | 37.3147 | 46.5995 | 36.2766 | 5.30332 | 0.746738 | 122 |
| 237 | 6.5973 | 11.2192 | 16.1074 | 14.3701 | 15.7080 | 42.2671 | 54.8320 | 41.7814 | 5.03230 | 0.790458 | 114 |
| 238 | 4.9375 | 10.2072 | 15.6882 | 13.1878 | 14.5315 | 42.2671 | 54.8320 | 43.1576 | 5.48400 | 0.746738 | 113 |
| 239 | 9.0871 | 10.8819 | 16.5267 | 14.3701 | 15.7080 | 43.0925 | 56.6614 | 43.8457 | 5.84536 | 0.768598 | 116 |
| 240 | 7.4272 | 9.8698 | 14.8496 | 12.3996 | 13.3551 | 40.6163 | 54.8320 | 43.1576 | 5.57434 | 0.703018 | 114 |
| 241 | 10.1936 | 12.2313 | 15.6882 | 12.3996 | 16.4923 | 55.4735 | 66.7233 | 43.8457 | 5.66468 | 0.703018 | 105 |
| 242 | 10.7469 | 11.5566 | 15.6882 | 12.3996 | 16.8844 | 57.1243 | 67.6381 | 43.1576 | 5.48400 | 0.724878 | 103 |
| 243 | 10.4703 | 12.2313 | 15.6882 | 12.7937 | 16.8844 | 59.6005 | 72.2117 | 47.2862 | 6.11638 | 0.790458 | 103 |
| 244 | 10.4703 | 12.2313 | 16.1074 | 13.1878 | 17.2766 | 59.6005 | 71.2969 | 46.5981 | 6.29706 | 0.768598 | 103 |

TABLE 3.8

TABLE 8: Radiometrically calibrated ATM field site means from CRYM386

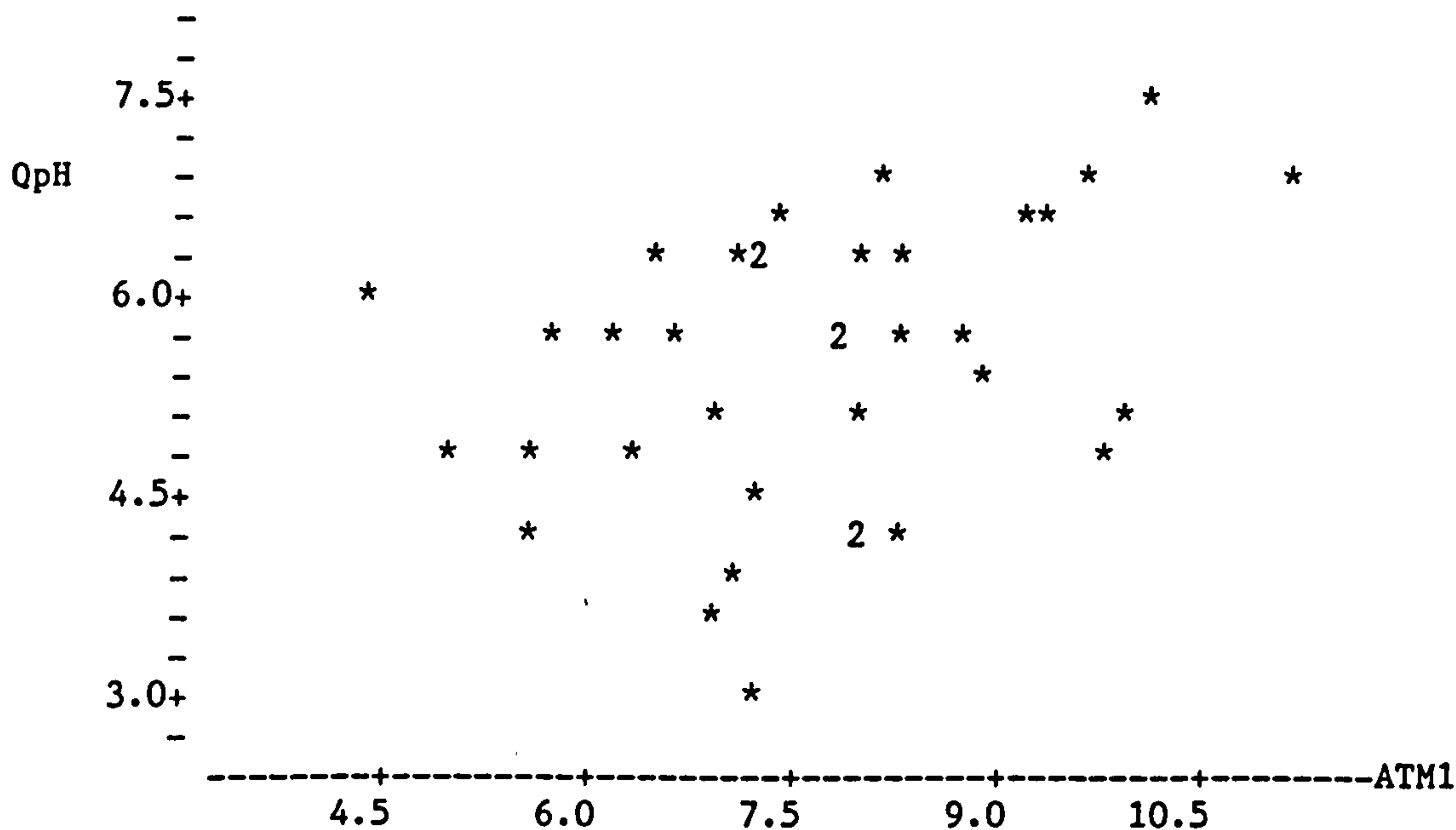
| SITE | MR1 | MR2 | MR3 | MR4 | MR5 | MR6 | MR7 | MR8 | MR9 | MR10 | MDM11 |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 1 | 6.8740 | 9.5324 | 13.6965 | 11.8085 | 12.7668 | 37.1063 | 48.2003 | 38.1689 | 5.14522 | 0.62651 | 125.50 |
| 2 | 7.2198 | 10.3758 | 15.8978 | 14.1731 | 16.0021 | 38.7591 | 43.3980 | 30.4278 | 4.71611 | 0.64290 | 114.75 |
| 3 | 5.5599 | 8.3517 | 10.8663 | 10.6262 | 11.2963 | 20.8067 | 23.7315 | 17.6979 | 2.61570 | 0.39698 | 131.00 |
| 4 | 7.0123 | 10.5445 | 15.3737 | 14.8627 | 16.0021 | 36.4893 | 44.7701 | 35.0725 | 5.19039 | 0.81232 | 122.75 |
| 5 | 6.1824 | 9.1951 | 13.6965 | 12.2026 | 13.0609 | 32.1559 | 41.3399 | 33.0082 | 4.80645 | 0.65383 | 118.25 |
| 6 | 4.3842 | 8.6047 | 11.6001 | 10.9218 | 11.5904 | 22.4575 | 26.7043 | 20.9664 | 4.06114 | 0.58279 | 116.25 |
| 7 | 7.0123 | 8.9421 | 14.0110 | 11.7100 | 13.1590 | 41.6480 | 53.2312 | 40.5773 | 5.59692 | 0.69755 | 109.00 |
| 8 | 5.6982 | 8.4360 | 11.9145 | 12.1041 | 13.9433 | 27.2035 | 31.0493 | 22.5146 | 3.90305 | 0.63744 | 110.50 |
| 9 | 11.0927 | 14.4242 | 22.0823 | 18.1140 | 21.4922 | 62.6957 | 71.0683 | 46.4261 | 6.22930 | 0.88883 | 112.50 |
| 10 | 9.5712 | 12.4843 | 19.2521 | 16.0450 | 19.4334 | 56.2989 | 63.2931 | 42.4695 | 6.18413 | 0.91069 | 115.25 |
| 11 | 7.9114 | 11.1349 | 17.1557 | 13.9760 | 17.0805 | 52.7909 | 60.5490 | 40.9213 | 5.93570 | 0.80139 | 127.50 |
| 12 | 10.1245 | 14.0025 | 19.1473 | 16.6361 | 20.8059 | 55.6798 | 62.8358 | 41.0933 | 6.34223 | 0.91615 | 114.75 |
| 13 | 7.9114 | 10.2915 | 13.1724 | 12.3011 | 14.7276 | 34.6321 | 36.5376 | 23.7188 | 4.67094 | 0.67023 | 123.50 |
| 14 | 8.8796 | 10.2915 | 13.1724 | 12.0056 | 14.1394 | 31.5369 | 32.8787 | 21.4825 | 4.53543 | 0.68662 | 124.00 |
| 15 | 9.7095 | 11.9783 | 17.4701 | 15.3553 | 18.0609 | 44.5369 | 47.7429 | 31.1159 | 5.19039 | 0.73034 | 108.75 |
| 16 | 7.2198 | 10.3758 | 13.9062 | 13.2864 | 15.3158 | 31.3305 | 32.8787 | 22.3426 | 4.78386 | 0.74674 | 124.00 |
| 17 | 6.3898 | 8.8577 | 11.8097 | 11.0203 | 12.9629 | 30.9178 | 33.7934 | 22.5146 | 4.06114 | 0.57732 | 117.75 |
| 18 | 7.2198 | 10.1228 | 14.4303 | 12.8923 | 13.8452 | 35.0448 | 43.1693 | 34.0403 | 5.70985 | 0.76860 | 135.25 |
| 19 | 6.8740 | 9.7855 | 14.4303 | 12.7937 | 13.8452 | 38.1401 | 46.8282 | 35.7606 | 5.16781 | 0.73581 | 124.25 |
| 20 | 7.1506 | 11.0506 | 15.3737 | 13.9760 | 16.1001 | 35.0448 | 38.5957 | 26.8153 | 5.16781 | 0.77406 | 118.00 |
| 21 | 7.7730 | 10.5445 | 14.8496 | 13.0893 | 15.5119 | 36.4893 | 40.4251 | 27.8474 | 5.16781 | 0.76313 | 123.25 |
| 22 | 7.9805 | 10.6289 | 14.2206 | 13.6804 | 17.0805 | 38.3464 | 39.7391 | 24.9230 | 5.14522 | 0.77406 | 121.50 |
| 23 | 8.1880 | 10.8819 | 14.5351 | 13.2864 | 16.0021 | 37.1083 | 40.1965 | 26.4712 | 5.12264 | 0.73034 | 114.75 |
| 24 | 8.2572 | 11.3036 | 15.5833 | 13.6804 | 16.6883 | 43.0925 | 47.5142 | 31.2879 | 5.30332 | 0.73034 | 114.75 |
| 25 | 8.2572 | 11.6409 | 16.9460 | 14.5671 | 17.3746 | 45.9814 | 50.2584 | 33.6963 | 5.73243 | 0.83418 | 123.50 |
| 26 | 8.6721 | 12.4843 | 17.4701 | 14.9612 | 17.6687 | 48.2512 | 55.0607 | 36.2766 | 5.39366 | 0.78499 | 115.25 |
| 27 | 9.0871 | 12.4000 | 17.3653 | 15.0598 | 17.9628 | 48.8703 | 55.7467 | 36.7927 | 5.28074 | 0.75220 | 115.00 |
| 28 | 9.9170 | 12.4843 | 17.9942 | 14.3701 | 18.0609 | 61.6640 | 71.7543 | 46.7702 | 6.09379 | 0.83418 | 102.25 |
| 29 | 8.0497 | 10.7132 | 15.5833 | 12.9908 | 16.0021 | 48.8703 | 55.0607 | 35.9326 | 5.23557 | 0.70848 | 112.50 |
| 30 | 7.9114 | 10.5445 | 16.2123 | 13.0893 | 15.9040 | 48.8703 | 55.0607 | 35.9326 | 4.76128 | 0.63744 | 106.25 |
| 31 | 7.7730 | 10.6289 | 15.4785 | 12.8923 | 15.8060 | 45.5687 | 50.0297 | 32.1480 | 4.55801 | 0.62104 | 111.75 |
| 32 | 9.2946 | 11.7253 | 16.9460 | 13.7790 | 16.8844 | 51.9655 | 59.6343 | 38.8570 | 5.07747 | 0.70848 | 104.00 |
| 33 | 6.2515 | 11.1349 | 15.5833 | 13.6804 | 14.4335 | 37.5210 | 48.2003 | 38.5130 | 5.48400 | 0.70848 | 122.25 |
| 34 | 7.3581 | 10.2072 | 15.3737 | 12.8923 | 14.0413 | 42.0607 | 55.7467 | 42.6416 | 5.32590 | 0.66476 | 97.00 |
| 35 | 6.6665 | 11.1349 | 17.8894 | 16.5376 | 17.4726 | 40.8226 | 50.4871 | 40.0612 | 5.55175 | 0.76313 | 109.25 |
| 36 | 4.9375 | 9.7011 | 13.9062 | 13.6804 | 14.4335 | 27.4099 | 34.9368 | 30.0837 | 4.60318 | 0.71395 | 124.00 |
| 37 | 5.5599 | 9.2794 | 12.5435 | 13.6804 | 15.0217 | 26.7908 | 32.4213 | 28.0194 | 4.98713 | 0.84511 | 117.00 |
| 38 | 8.4646 | 12.6530 | 17.9942 | 17.1287 | 19.9236 | 38.3464 | 38.3670 | 23.7188 | 4.21924 | 0.73034 | 101.75 |
| 39 | 8.1188 | 10.7975 | 14.6399 | 12.2026 | 14.1394 | 33.8067 | 34.4795 | 22.3426 | 4.39992 | 0.60465 | 108.00 |
| 40 | 7.8422 | 12.1470 | 16.8412 | 14.3701 | 16.6883 | 35.0448 | 35.1655 | 21.8265 | 4.15148 | 0.68116 | 110.50 |
| 41 | 10.8852 | 13.3277 | 19.1473 | 16.2420 | 19.6295 | 48.4576 | 50.7157 | 31.8040 | 5.46141 | 0.82325 | 117.50 |
| 42 | 9.5712 | 13.9181 | 18.7280 | 15.1583 | 18.6491 | 45.5687 | 44.5414 | 25.9551 | 4.71611 | 0.69209 | 115.25 |
| 43 | 10.6778 | 15.6049 | 22.7113 | 19.2962 | 23.3549 | 56.7116 | 58.2622 | 35.0725 | 6.31964 | 0.91069 | 117.50 |
| 44 | 10.4703 | 13.8338 | 18.7280 | 16.4391 | 20.3157 | 50.3147 | 53.2312 | 32.4921 | 6.13896 | 0.87790 | 124.25 |
| 45 | 9.2254 | 12.5687 | 16.9460 | 14.7642 | 18.6491 | 49.0766 | 52.5452 | 33.0082 | 6.07121 | 0.81778 | 117.00 |
| 46 | 9.6404 | 12.1470 | 17.8894 | 14.3701 | 17.6687 | 54.2354 | 60.5490 | 37.9969 | 5.10005 | 0.70848 | 102.50 |
| 47 | 7.4964 | 9.7011 | 12.7531 | 11.9070 | 13.4531 | 32.3623 | 36.9949 | 24.7510 | 3.42876 | 0.48442 | 104.25 |
| 48 | 7.2889 | 10.3758 | 15.1640 | 13.1878 | 15.5119 | 43.7115 | 51.1731 | 34.2123 | 4.35475 | 0.59372 | 106.25 |
| 49 | 8.1880 | 11.0506 | 16.2123 | 13.5819 | 15.9040 | 45.3623 | 52.7739 | 35.4165 | 4.80645 | 0.67023 | 98.75 |
| 50 | 5.9057 | 9.5324 | 13.1724 | 12.0056 | 13.6492 | 36.2829 | 45.6848 | 33.6963 | 4.82903 | 0.64837 | 96.00 |
| 51 | 7.3581 | 10.0385 | 13.1724 | 11.7100 | 13.7472 | 39.1718 | 51.4018 | 39.0290 | 4.91937 | 0.68662 | 99.50 |
| 52 | 7.8422 | 9.9541 | 14.7448 | 11.9070 | 14.1394 | 45.5687 | 56.4327 | 39.3731 | 4.58060 | 0.63197 | 103.50 |
| 53 | 8.1880 | 11.3036 | 16.3171 | 14.1731 | 16.4923 | 45.5687 | 55.0607 | 39.2011 | 5.59692 | 0.77953 | 106.75 |
| 54 | 8.0497 | 10.8819 | 17.4701 | 14.9612 | 16.5903 | 44.9496 | 52.0878 | 37.4808 | 5.23556 | 0.68116 | 116.50 |
| 55 | 7.7039 | 11.6409 | 17.9943 | 14.9612 | 16.6883 | 50.9338 | 61.9211 | 44.7059 | 5.61951 | 0.77406 | 109.50 |
| 56 | 8.2572 | 10.3758 | 14.3255 | 12.3011 | 14.1394 | 43.9179 | 58.9482 | 45.3940 | 5.89053 | 0.75767 | 106.75 |
| 57 | 7.2198 | 10.1228 | 14.4303 | 12.8923 | 13.8452 | 35.0448 | 43.1693 | 34.0403 | 5.70985 | 0.76860 | 135.25 |
| 58 | 7.2198 | 10.3758 | 15.8978 | 14.1731 | 16.0021 | 38.7591 | 43.3980 | 30.4278 | 4.71611 | 0.64290 | 114.75 |
| 59 | 6.8740 | 9.7855 | 14.4303 | 12.7937 | 13.8452 | 38.1401 | 46.8282 | 35.7606 | 5.32590 | 0.73581 | 122.50 |
| 60 | 7.0123 | 10.5445 | 15.7930 | 13.5819 | 14.8256 | 42.0607 | 55.2893 | 42.9856 | 5.48400 | 0.75220 | 114.25 |
| 61 | 10.4703 | 12.0626 | 15.7930 | 12.6952 | 16.8844 | 57.9497 | 69.4675 | 45.2219 | 5.89053 | 0.74674 | 103.50 |

APPENDIX 2

CRYMLYN BOG STUDY

**RELATING AIRBORNE SCANNER DATA
TO FIELD-MEASURED VARIABLES**

**REGRESSION RESULTS AND SCATTER PLOTS
QUADRAT SAMPLES**



Correlation of QpH and ATM1 = 0.359

The regression equation is
 $QpH = 3.57 + 0.255 \text{ ATM1}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | 3.5689 | 0.8681 | 4.11 |
| ATM1 | 0.2549 | 0.1119 | 2.28 |

s = 1.001 R-sq = 12.9% R-sq(adj) = 10.4%

Analysis of Variance

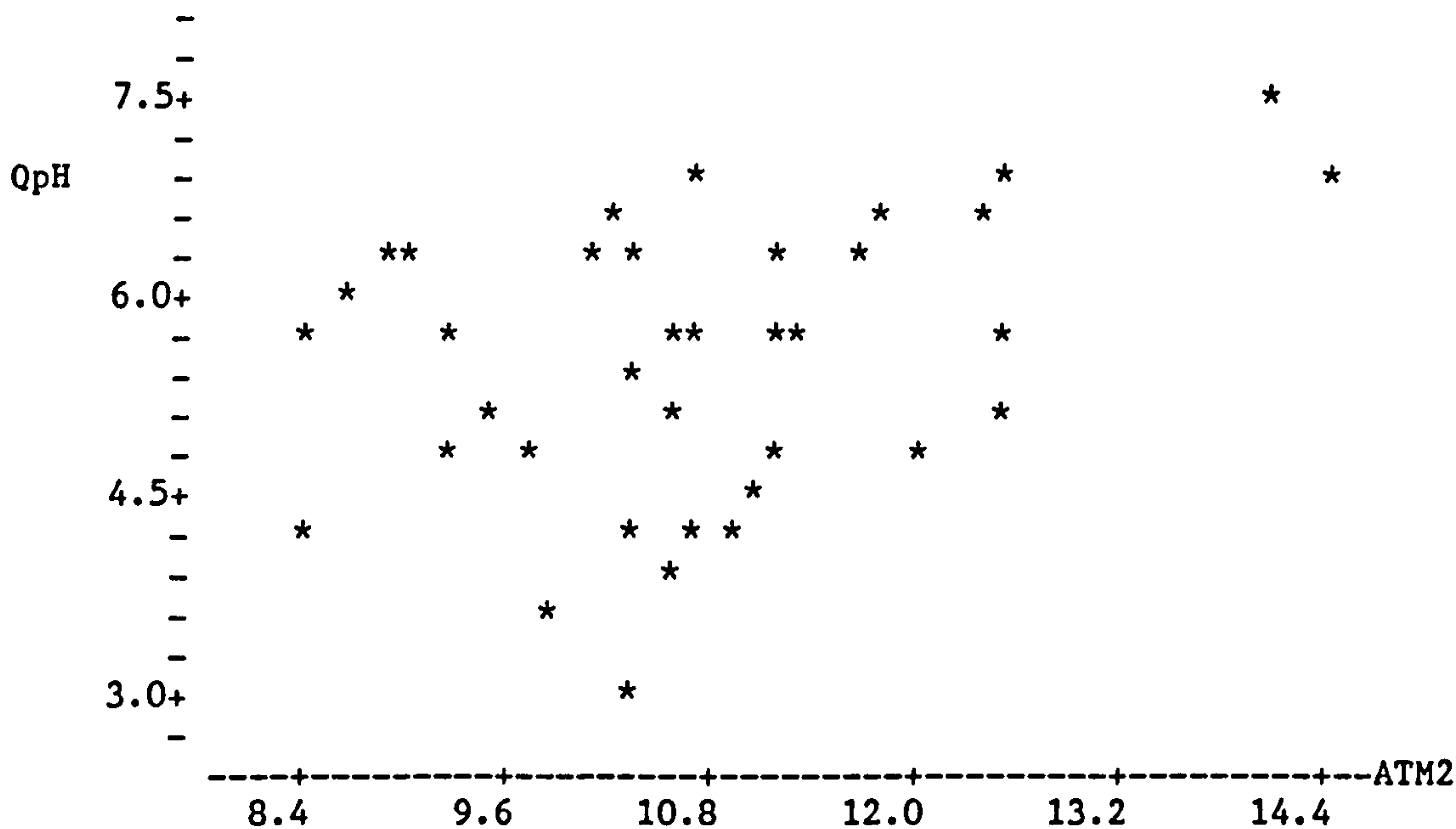
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 5.200 | 5.200 |
| Error | 35 | 35.040 | 1.001 |
| Total | 36 | 40.240 | |

Unusual Observations

| Obs. | ATM1 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 11.1 | 7.000 | 6.397 | 0.422 | 0.603 | 0.66 X |
| 16 | 7.2 | 3.140 | 5.409 | 0.170 | -2.269 | -2.30R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C101 = 0.396



Correlation of QpH and ATM2 = 0.377

The regression equation is
 $QpH = 2.50 + 0.281 \text{ ATM2}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | 2.497 | 1.263 | 1.98 |
| ATM2 | 0.2815 | 0.1170 | 2.41 |

s = 0.9932 R-sq = 14.2% R-sq(adj) = 11.7%

Analysis of Variance

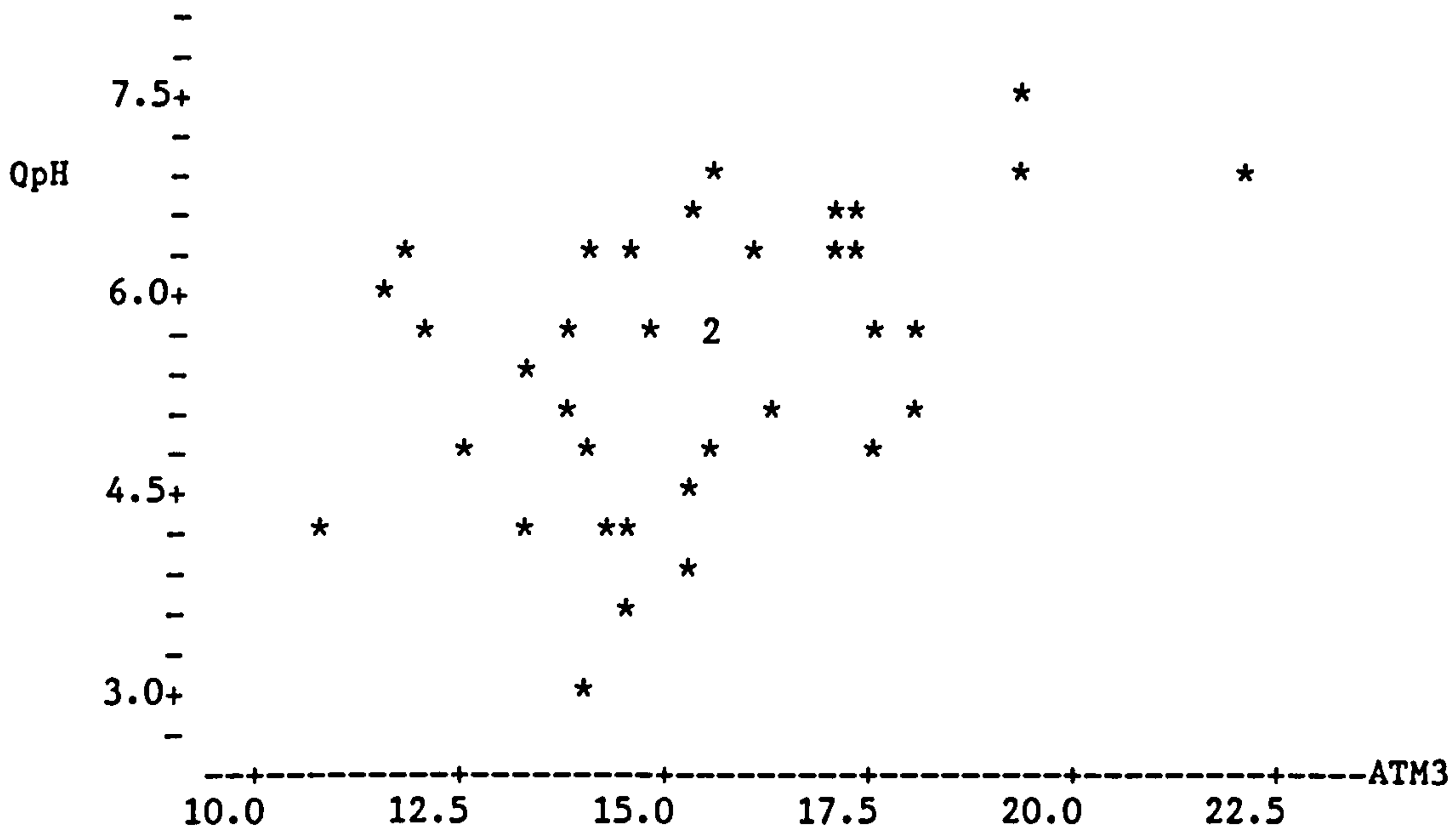
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 5.7108 | 5.7108 |
| Error | 35 | 34.5289 | 0.9865 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | ATM2 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 14.4 | 7.000 | 6.557 | 0.464 | 0.443 | 0.50 X |
| 12 | 14.0 | 7.580 | 6.439 | 0.419 | 1.141 | 1.27 X |
| 16 | 10.4 | 3.140 | 5.418 | 0.168 | -2.278 | -2.33R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C102 = 0.341



Correlation of QpH and ATM3 = 0.470

The regression equation is
 $QpH = 2.30 + 0.209 \text{ ATM3}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 2.302 | 1.032 | 2.23 |
| ATM3 | 0.20947 | 0.06658 | 3.15 |

s = 0.9467 R-sq = 22.0% R-sq(adj) = 19.8%

Analysis of Variance

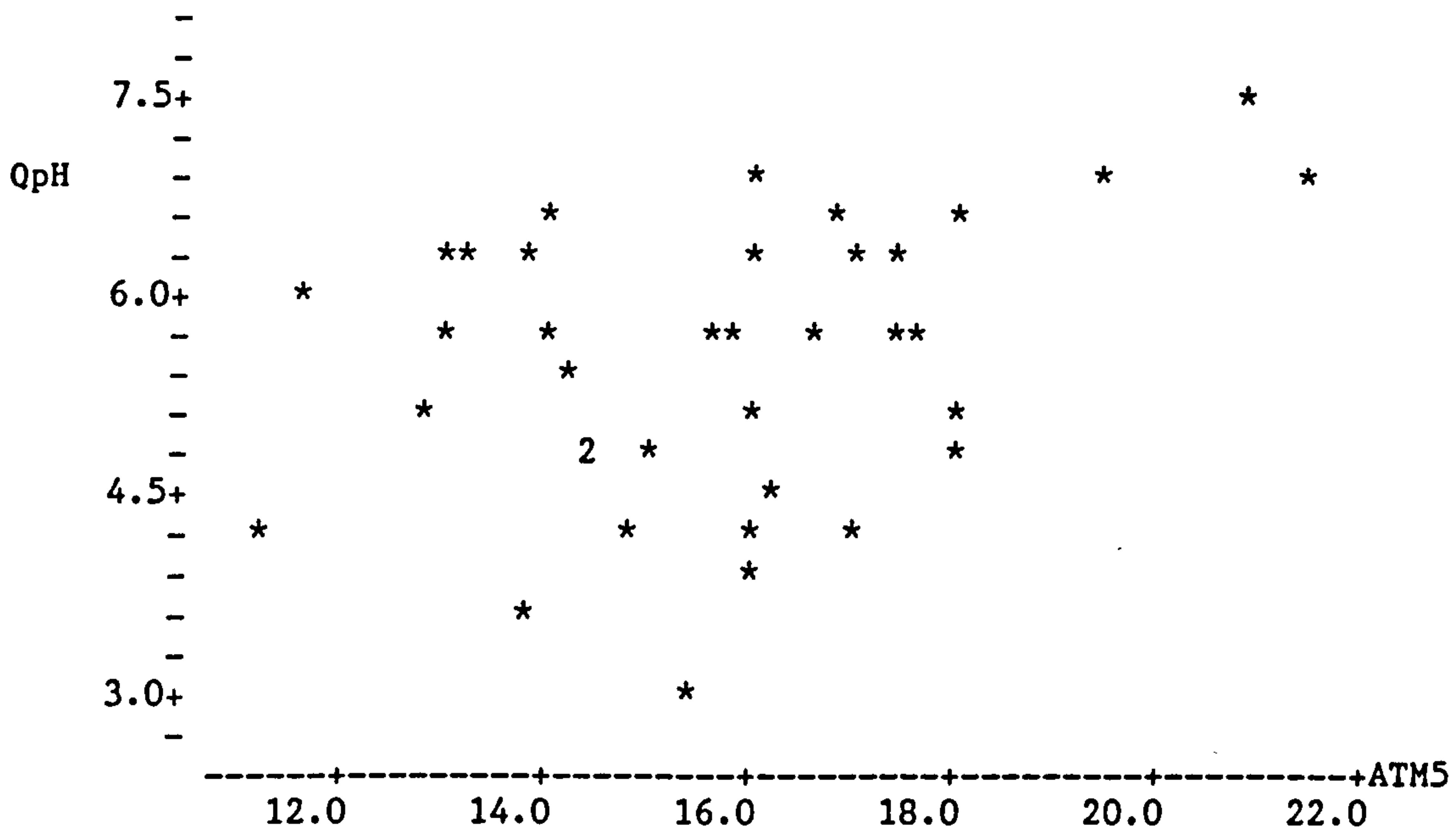
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 8.8718 | 8.8718 |
| Error | 35 | 31.3679 | 0.8962 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | ATM3 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 22.1 | 7.000 | 6.927 | 0.476 | 0.073 | 0.09 X |
| 16 | 13.9 | 3.140 | 5.215 | 0.182 | -2.075 | -2.23R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C103 = 0.475



Correlation of QpH and ATM5 = 0.366

The regression equation is
 $QpH = 2.88 + 0.168 \text{ ATM5}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 2.876 | 1.144 | 2.51 |
| ATM5 | 0.16756 | 0.07198 | 2.33 |

$s = 0.9978$ $R\text{-sq} = 13.4\%$ $R\text{-sq(adj)} = 10.9\%$

Analysis of Variance

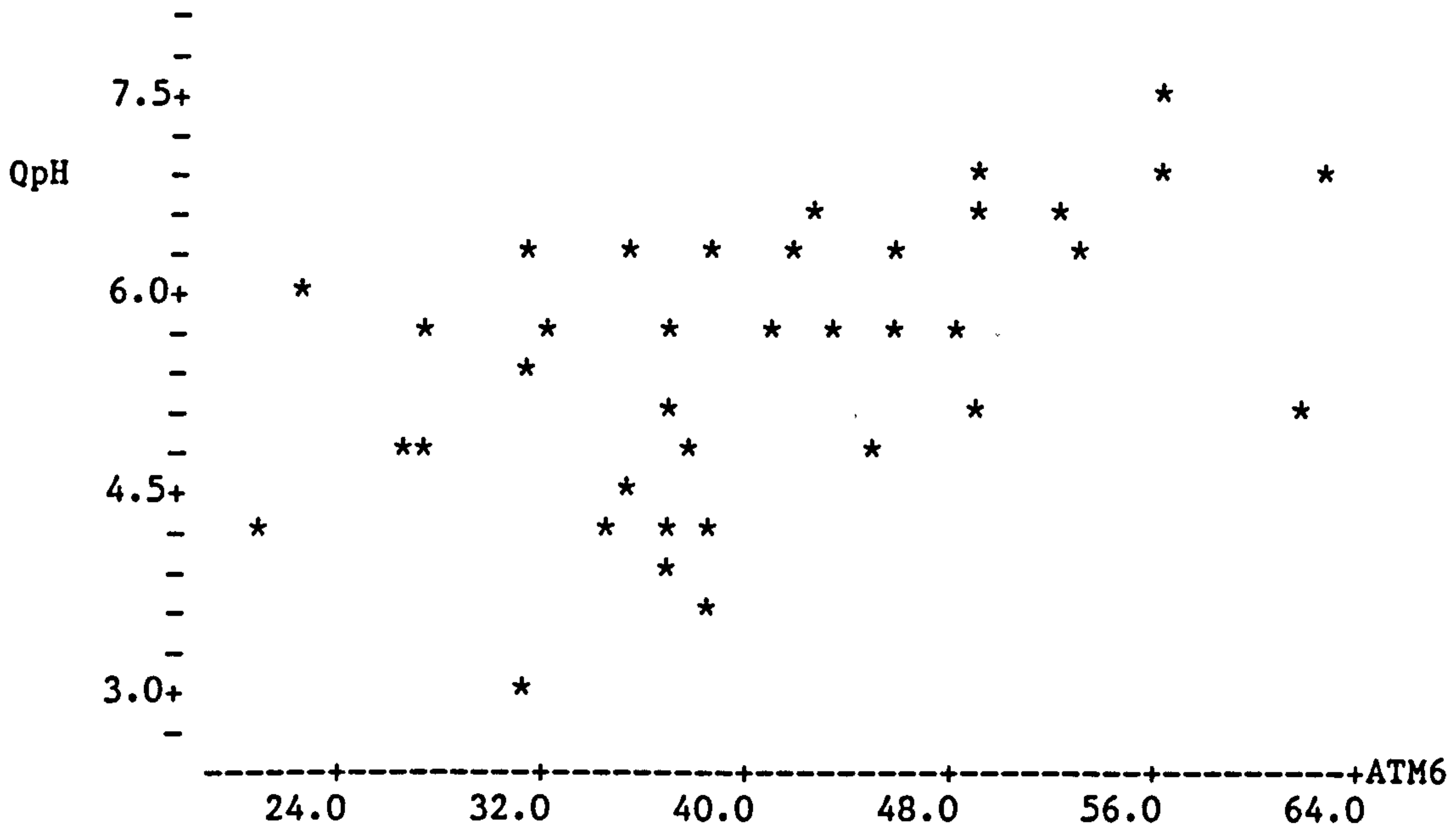
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 5.3945 | 5.3945 |
| Error | 35 | 34.8451 | 0.9956 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | ATM5 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 21.5 | 7.000 | 6.477 | 0.446 | 0.523 | 0.59 X |
| 16 | 15.3 | 3.140 | 5.442 | 0.167 | -2.302 | -2.34R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C105 = 0.317



Correlation of QpH and ATM6 = 0.515

The regression equation is
 $QpH = 3.37 + 0.0530 \text{ ATM6}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.3700 | 0.6208 | 5.43 |
| ATM6 | 0.05300 | 0.01490 | 3.56 |

$s = 0.9190$ $R\text{-sq} = 26.5\%$ $R\text{-sq(adj)} = 24.4\%$

Analysis of Variance

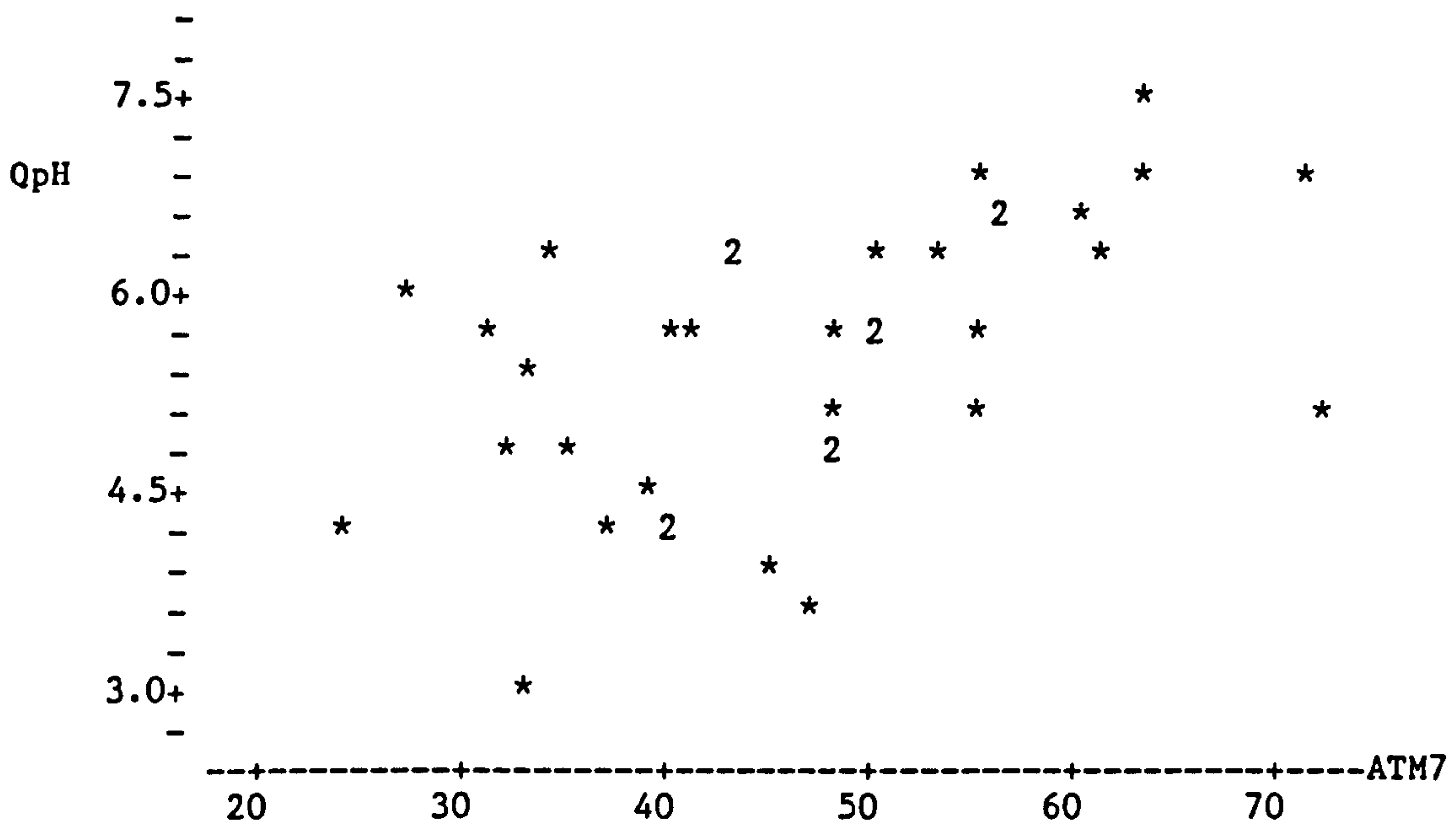
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 10.680 | 10.680 |
| Error | 35 | 29.560 | 0.845 |
| Total | 36 | 40.240 | |

Unusual Observations

| Obs. | ATM6 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 16 | 31.3 | 3.140 | 5.030 | 0.203 | -1.890 | -2.11R |
| 19 | 38.1 | 3.510 | 5.391 | 0.155 | -1.881 | -2.08R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C113 and C106 = 0.566



Correlation of QpH and ATM7 = 0.535

The regression equation is
 $QpH = 3.27 + 0.0481 \text{ ATM7}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.2709 | 0.6156 | 5.31 |
| ATM7 | 0.04806 | 0.01281 | 3.75 |

$s = 0.9056$ $R\text{-sq} = 28.7\%$ $R\text{-sq(adj)} = 26.6\%$

Analysis of Variance

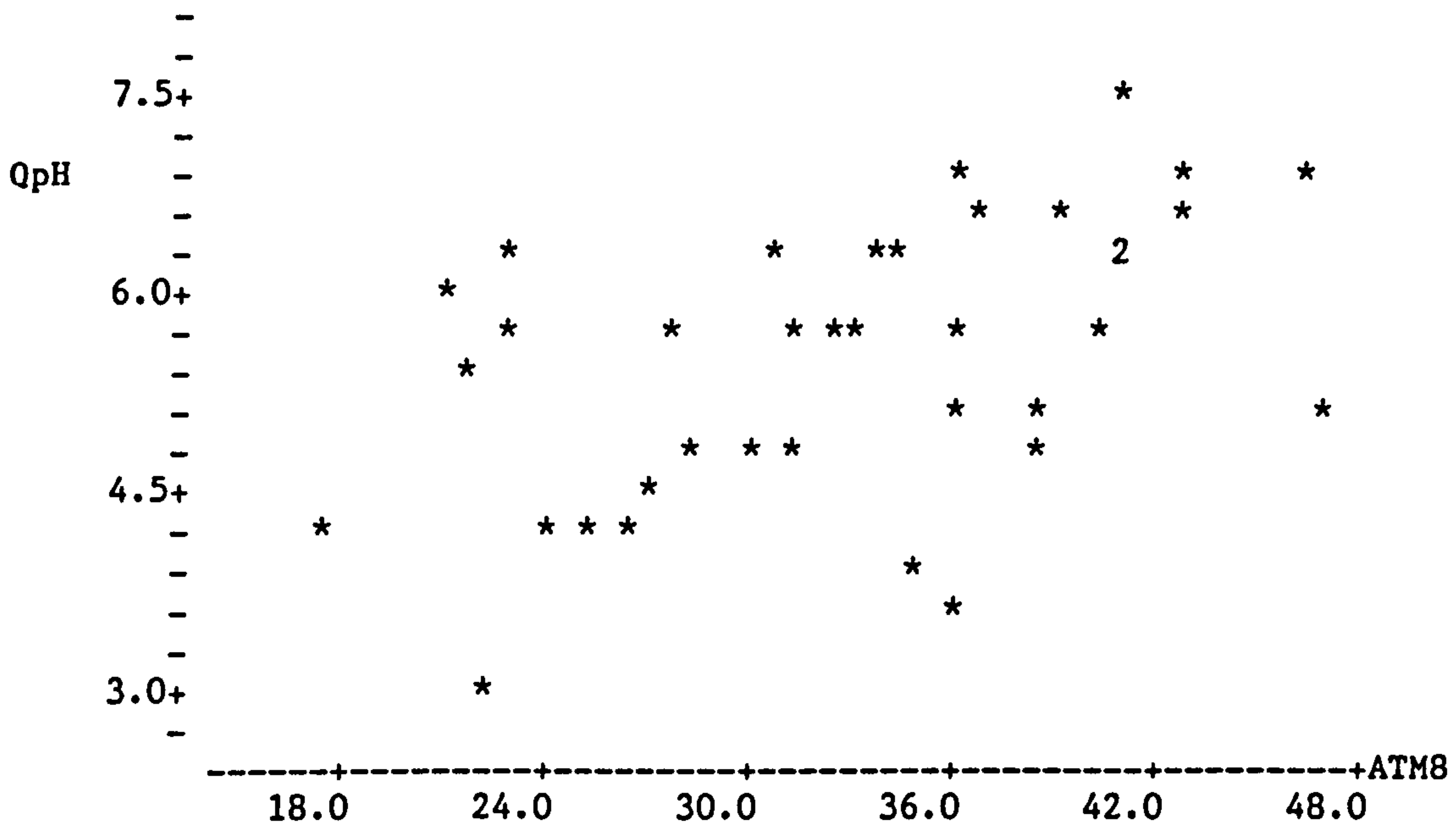
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 11.536 | 11.536 |
| Error | 35 | 28.703 | 0.820 |
| Total | 36 | 40.240 | |

Unusual Observations

| Obs. | ATM7 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 19 | 46.8 | 3.510 | 5.521 | 0.149 | -2.011 | -2.25R |
| 28 | 71.8 | 4.980 | 6.719 | 0.355 | -1.739 | -2.09R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C113 and C107 = 0.605



Correlation of QpH and ATM8 = 0.490

The regression equation is
 $QpH = 3.28 + 0.0680 \text{ ATM8}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.2801 | 0.6888 | 4.76 |
| ATM8 | 0.06804 | 0.02048 | 3.32 |

$s = 0.9349$ $R\text{-sq} = 24.0\%$ $R\text{-sq(adj)} = 21.8\%$

Analysis of Variance

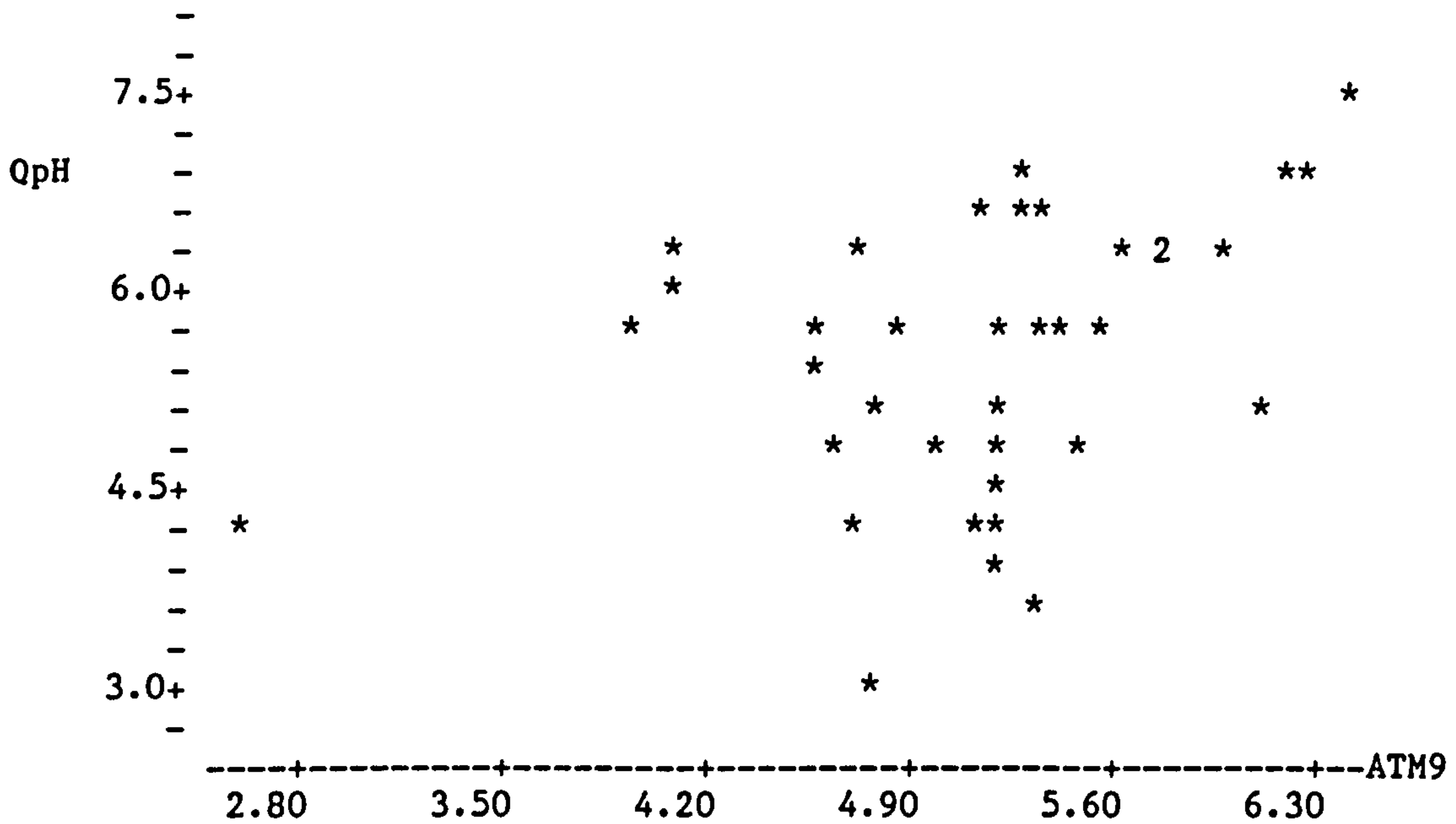
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 9.6508 | 9.6508 |
| Error | 35 | 30.5889 | 0.8740 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | ATM8 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 19 | 35.8 | 3.510 | 5.713 | 0.165 | -2.203 | -2.39R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C113 and C108 = 0.535



Correlation of QpH and ATM9 = 0.388

The regression equation is
 $QpH = 2.60 + 0.571 \text{ ATM9}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | 2.596 | 1.181 | 2.20 |
| ATM9 | 0.5707 | 0.2290 | 2.49 |

$s = 0.9881$ $R\text{-sq} = 15.1\%$ $R\text{-sq(adj)} = 12.6\%$

Analysis of Variance

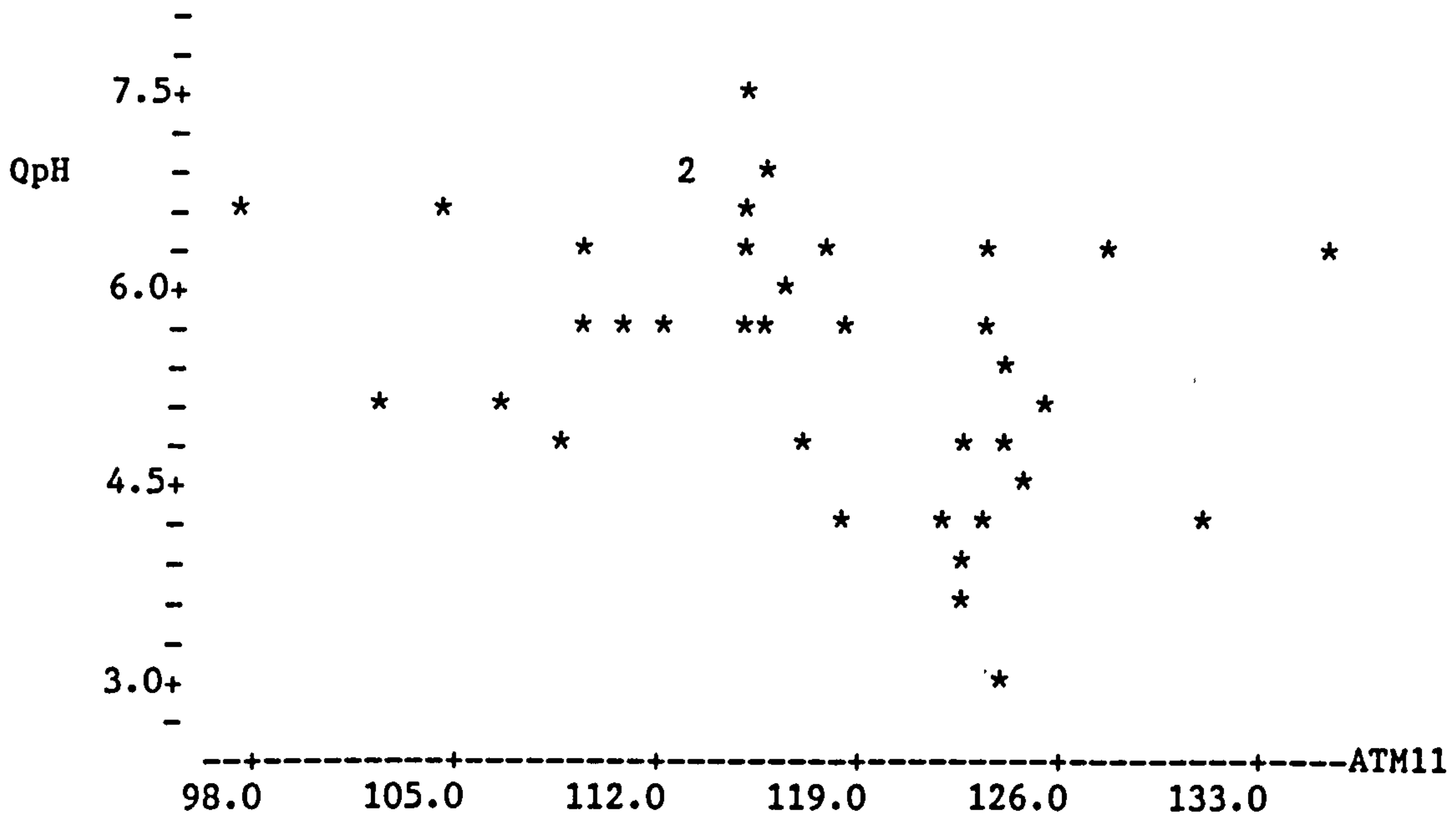
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 6.0664 | 6.0664 |
| Error | 35 | 34.1732 | 0.9764 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | ATM9 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 3 | 2.62 | 4.130 | 4.089 | 0.593 | 0.041 | 0.05 X |
| 16 | 4.78 | 3.140 | 5.326 | 0.179 | -2.186 | -2.25R |
| 19 | 5.33 | 3.510 | 5.636 | 0.170 | -2.126 | -2.18R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C109 = 0.429



Correlation of QpH and ATM11 = -0.362

The regression equation is
 QpH = 11.0 - 0.0471 ATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 11.035 | 2.407 | 4.58 |
| ATM11 | -0.04714 | 0.02049 | -2.30 |

s = 0.9994 R-sq = 13.1% R-sq(adj) = 10.7%

Analysis of Variance

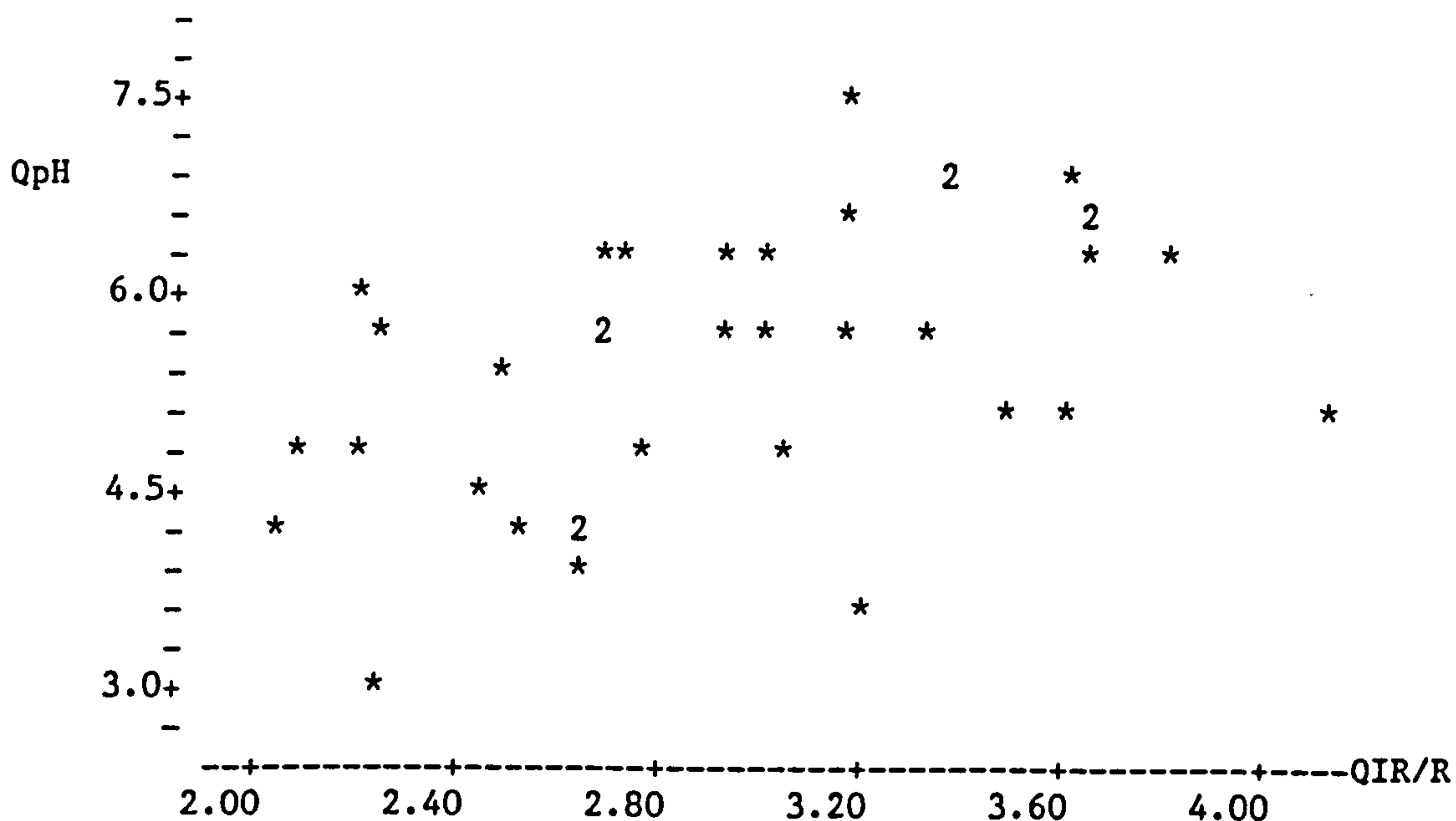
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 5.2848 | 5.2848 |
| Error | 35 | 34.9549 | 0.9987 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | ATM11 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 16 | 124 | 3.140 | 5.190 | 0.216 | -2.050 | -2.10R |
| 18 | 135 | 6.340 | 4.659 | 0.405 | 1.681 | 1.84 X |
| 34 | 97 | 6.700 | 6.462 | 0.445 | 0.238 | 0.27 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C111 = -0.397



Correlation of QpH and QIR/R = 0.479

The regression equation is
 $QpH = 2.73 + 0.944 QIR/R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | 2.7282 | 0.8768 | 3.11 |
| QIR/R | 0.9445 | 0.2929 | 3.22 |

s = 0.9415 R-sq = 22.9% R-sq(adj) = 20.7%

Analysis of Variance

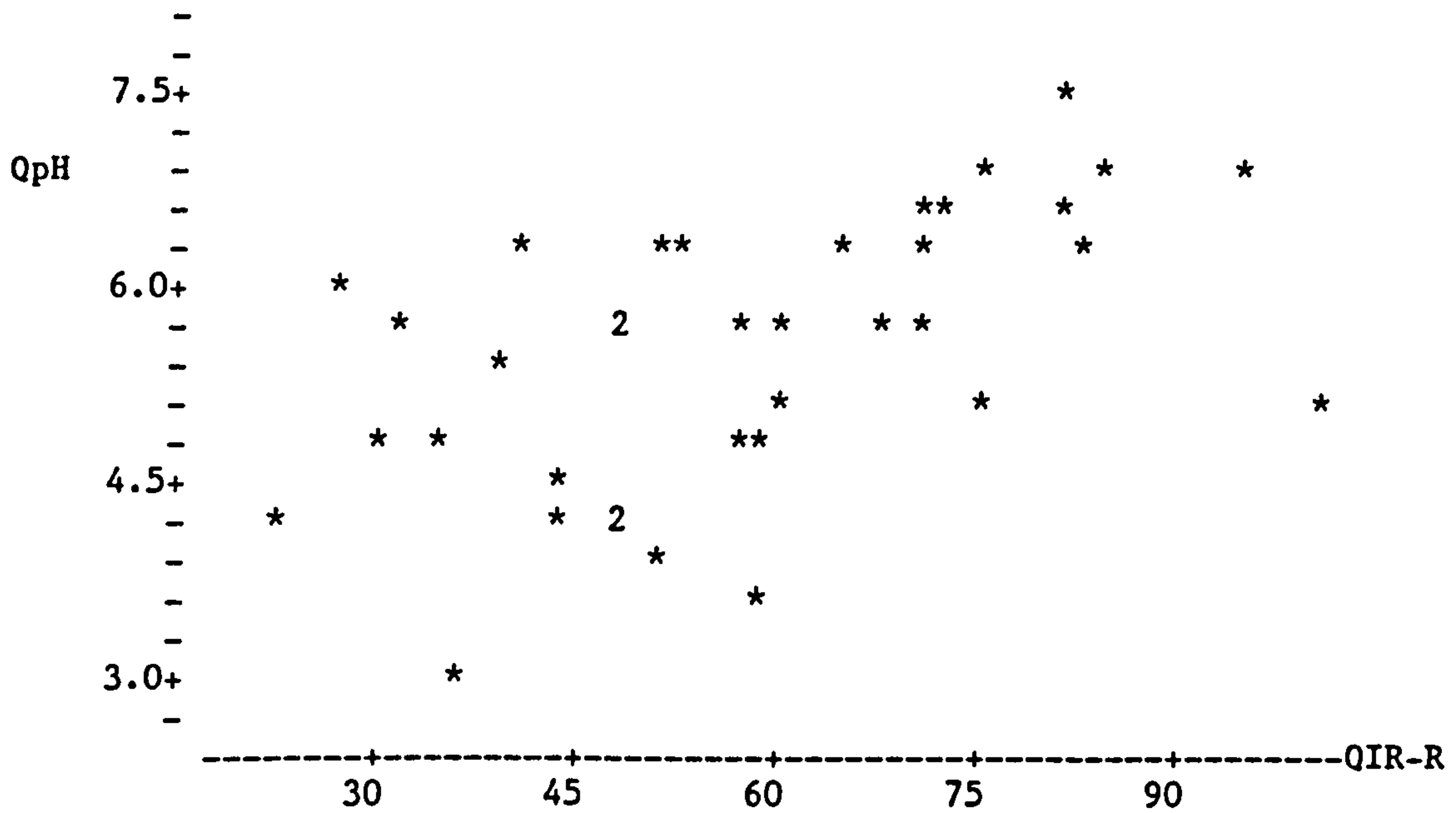
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 9.2177 | 9.2177 |
| Error | 35 | 31.0220 | 0.8863 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | QIR/R | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 12 | 3.17 | 7.580 | 5.718 | 0.167 | 1.862 | 2.01R |
| 19 | 3.19 | 3.510 | 5.741 | 0.170 | -2.231 | -2.41R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C113 and C146 = 0.545



Correlation of QpH and QIR-R = 0.536

The regression equation is
 $QpH = 3.80 + 0.0296 QIR-R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | 3.8032 | 0.4785 | 7.95 |
| QIR-R | 0.029600 | 0.007881 | 3.76 |

s = 0.9052 R-sq = 28.7% R-sq(adj) = 26.7%

Analysis of Variance

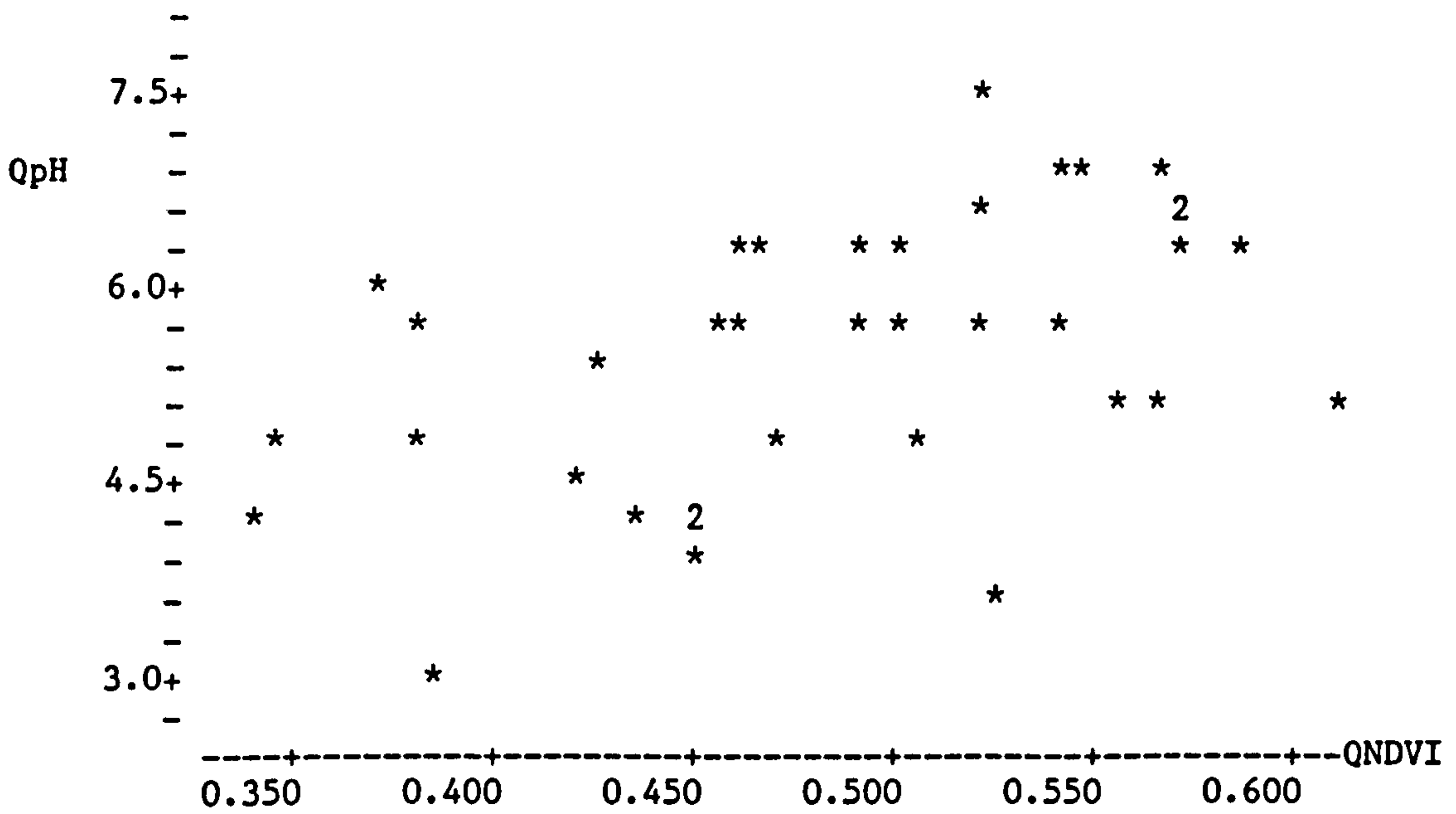
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 11.560 | 11.560 |
| Error | 35 | 28.679 | 0.819 |
| Total | 36 | 40.240 | |

Unusual Observations

| Obs. | QIR-R | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 19 | 58 | 3.510 | 5.530 | 0.149 | -2.020 | -2.26R |
| 28 | 101 | 4.980 | 6.792 | 0.372 | -1.812 | -2.20RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C113 and C147 = 0.606



Correlation of QpH and QNDVI = 0.495

The regression equation is
 $QpH = 1.95 + 7.37 QNDVI$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | 1.945 | 1.071 | 1.82 |
| QNDVI | 7.369 | 2.189 | 3.37 |

$s = 0.9320$ $R\text{-sq} = 24.5\%$ $R\text{-sq(adj)} = 22.3\%$

Analysis of Variance

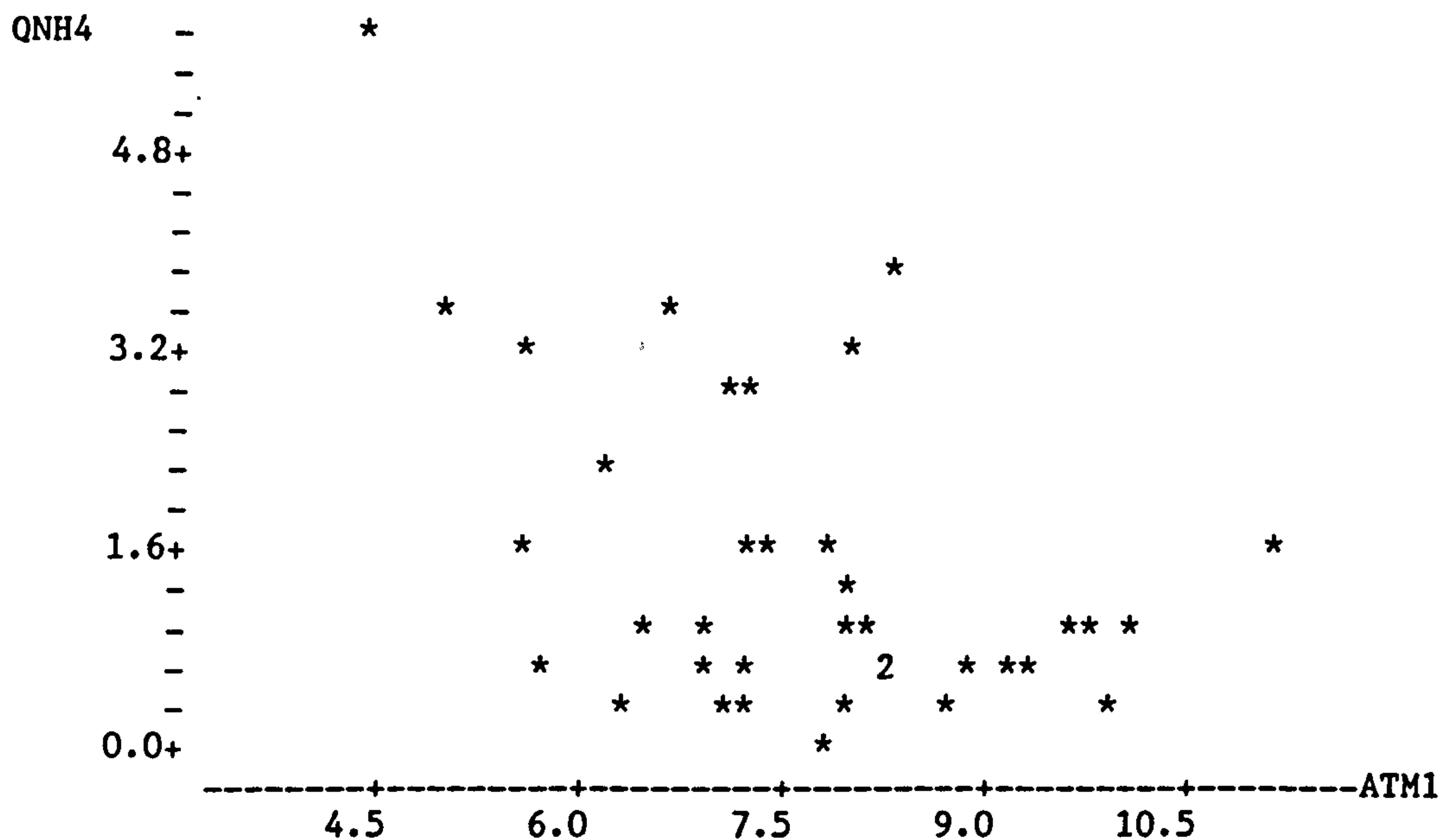
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 9.8406 | 9.8406 |
| Error | 35 | 30.3990 | 0.8685 |
| Total | 36 | 40.2396 | |

Unusual Observations

| Obs. | QNDVI | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 19 | 0.523 | 3.510 | 5.796 | 0.175 | -2.286 | -2.50R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C113 and C148 = 0.545



Correlation of QNH4 and ATM1 = -0.477

The regression equation is
 $QNH4 = 4.56 - 0.407 \text{ ATM1}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 4.5571 | 0.9843 | 4.63 |
| ATM1 | -0.4070 | 0.1268 | -3.21 |

$s = 1.135$ $R\text{-sq} = 22.7\%$ $R\text{-sq(adj)} = 20.5\%$

Analysis of Variance

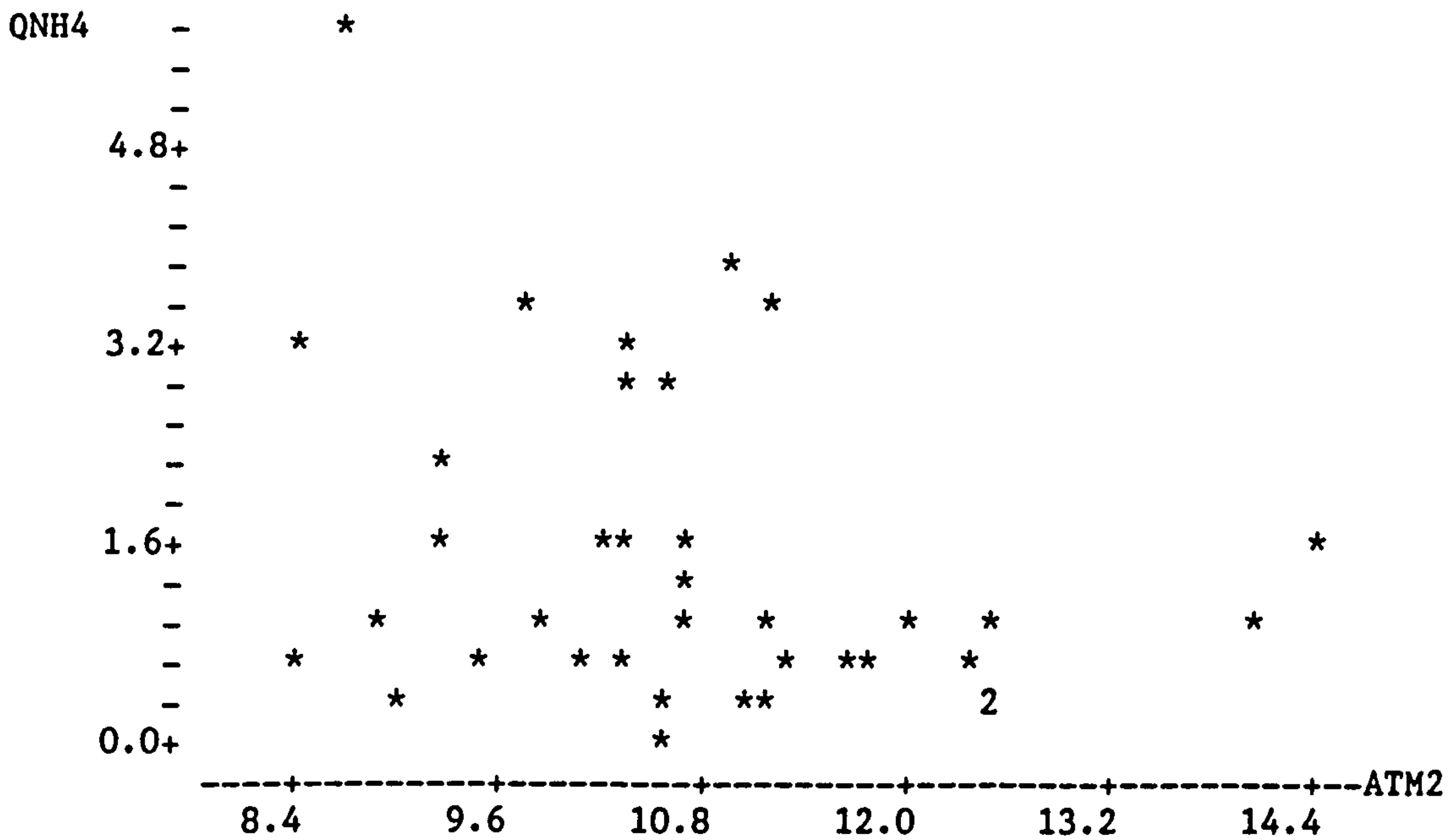
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 13.256 | 13.256 |
| Error | 35 | 45.049 | 1.287 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | ATM1 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 6 | 4.4 | 5.640 | 2.773 | 0.451 | 2.867 | 2.75R |
| 9 | 11.1 | 1.440 | 0.042 | 0.478 | 1.398 | 1.36 X |
| 23 | 8.2 | 3.760 | 1.224 | 0.200 | 2.536 | 2.27R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C114 and C101 = -0.334



Correlation of QNH4 and ATM2 = -0.332

The regression equation is
 $QNH4 = 4.65 - 0.299 \text{ ATM2}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 4.654 | 1.549 | 3.01 |
| ATM2 | -0.2987 | 0.1434 | -2.08 |

$s = 1.217$ $R\text{-sq} = 11.0\%$ $R\text{-sq(adj)} = 8.5\%$

Analysis of Variance

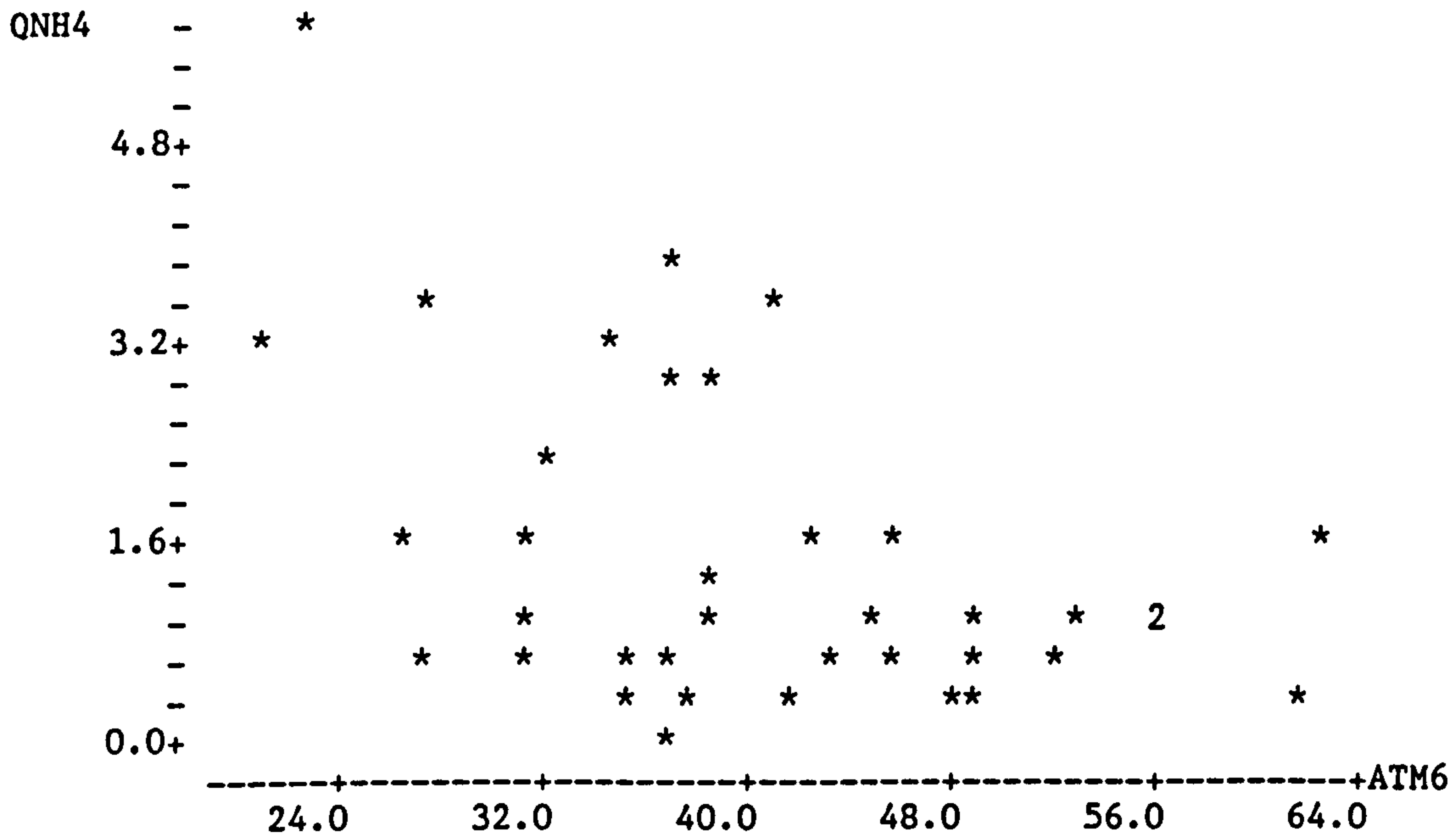
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 6.431 | 6.431 |
| Error | 35 | 51.874 | 1.482 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | ATM2 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 6 | 8.6 | 5.640 | 2.084 | 0.362 | 3.556 | 3.06R |
| 9 | 14.4 | 1.440 | 0.346 | 0.569 | 1.094 | 1.02 X |
| 12 | 14.0 | 0.960 | 0.472 | 0.513 | 0.488 | 0.44 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C114 and C102 = -0.309



Correlation of QNH4 and ATM6 = -0.472

The regression equation is
 QNH4 = 3.82 - 0.0584 ATM6

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.8161 | 0.7688 | 4.96 |
| ATM6 | -0.05842 | 0.01846 | -3.17 |

s = 1.138 R-sq = 22.3% R-sq(adj) = 20.0%

Analysis of Variance

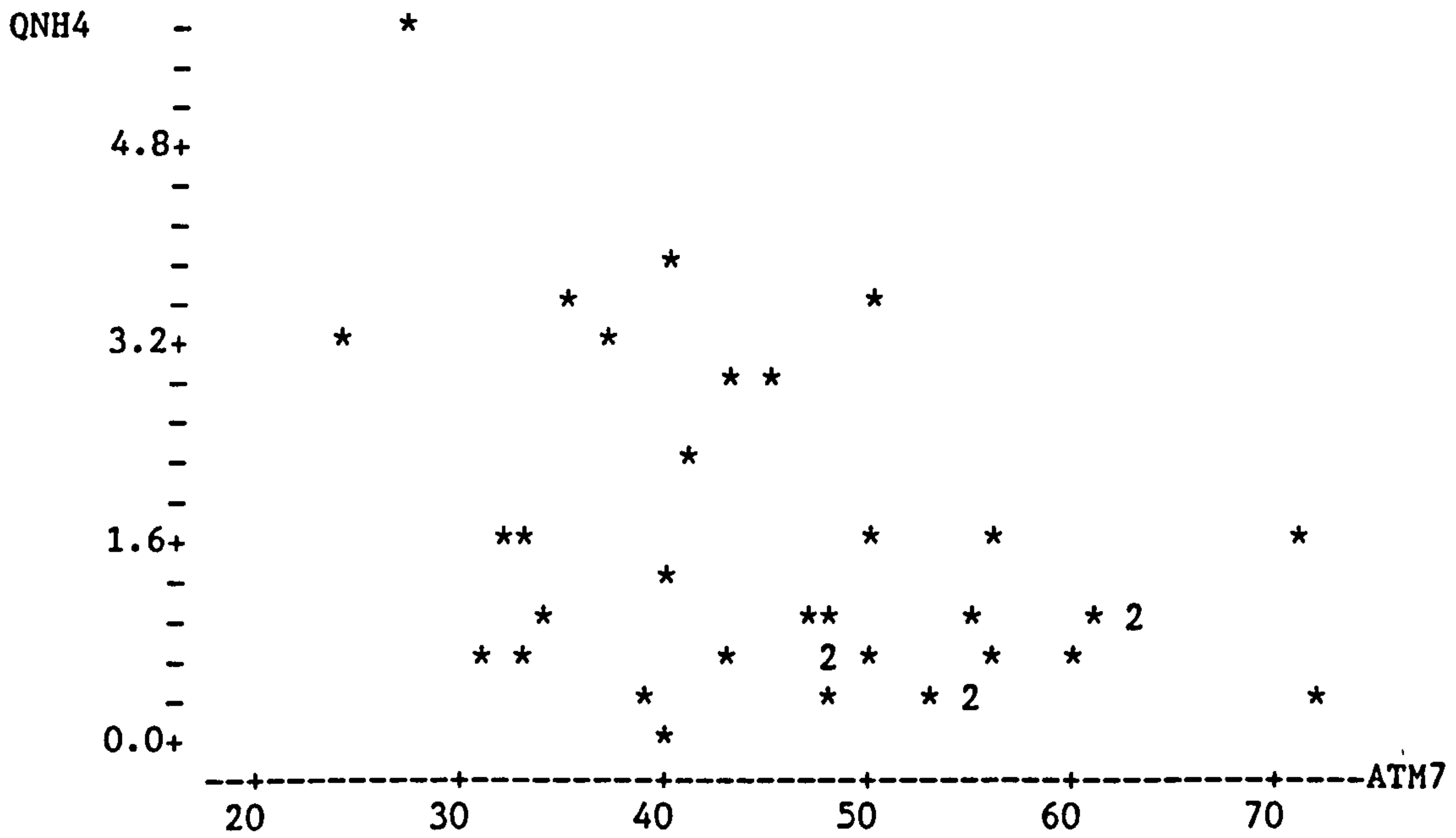
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 12.977 | 12.977 |
| Error | 35 | 45.328 | 1.295 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | ATM6 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 6 | 22.5 | 5.640 | 2.504 | 0.380 | 3.136 | 2.92R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C114 and C106 = -0.361



Correlation of QNH4 and ATM7 = -0.458

The regression equation is
 QNH4 = 3.76 - 0.0494 ATM7

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.7606 | 0.7802 | 4.82 |
| ATM7 | -0.04944 | 0.01624 | -3.04 |

s = 1.148 R-sq = 20.9% R-sq(adj) = 18.7%

Analysis of Variance

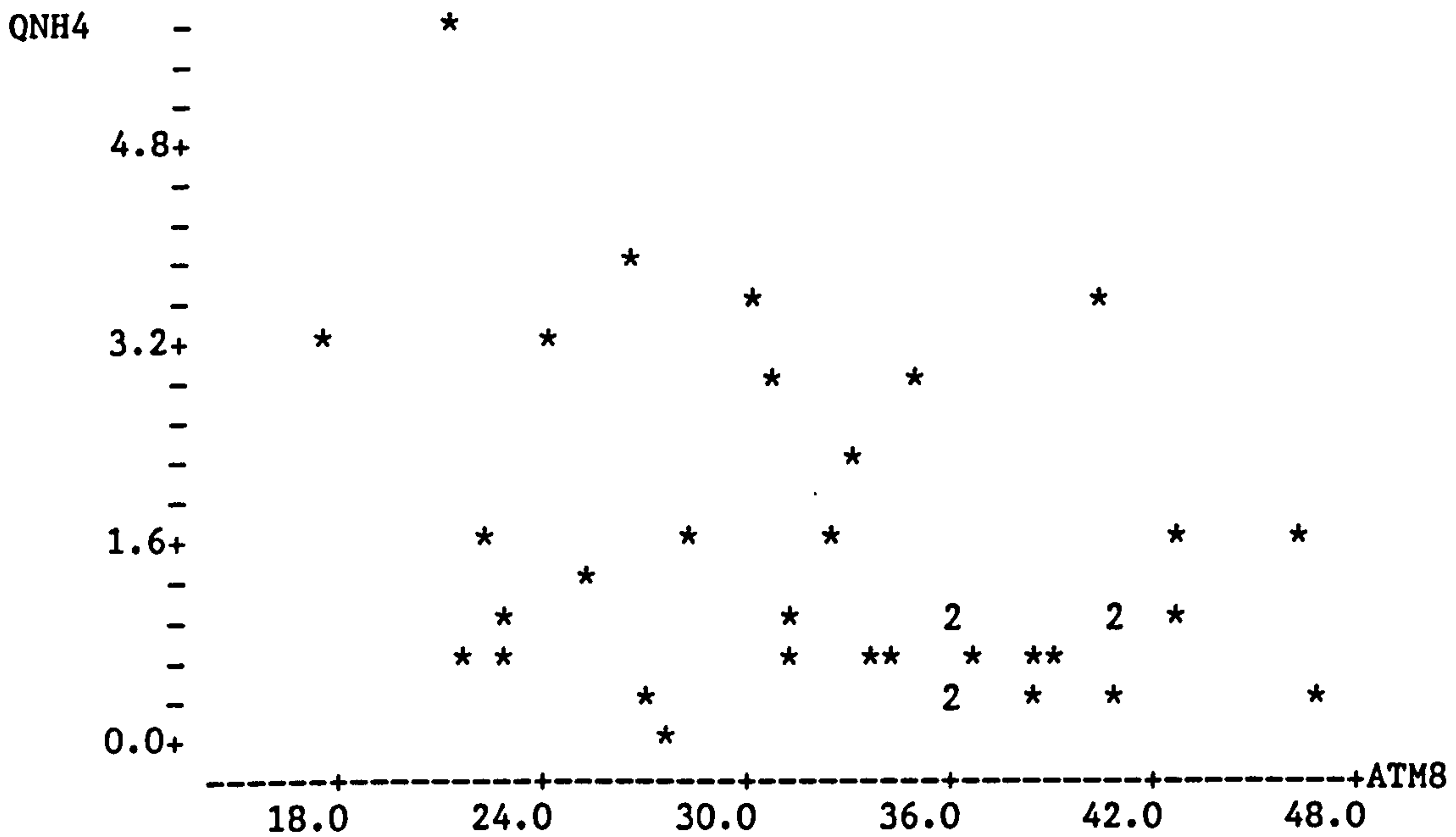
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 12.209 | 12.209 |
| Error | 35 | 46.095 | 1.317 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | ATM7 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 6 | 26.7 | 5.640 | 2.440 | 0.374 | 3.200 | 2.95R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C114 and C107 = -0.373



Correlation of QNH4 and ATM8 = -0.378

The regression equation is
 QNH4 = 3.53 - 0.0632 ATM8

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.5283 | 0.8805 | 4.01 |
| ATM8 | -0.06320 | 0.02617 | -2.41 |

s = 1.195 R-sq = 14.3% R-sq(adj) = 11.8%

Analysis of Variance

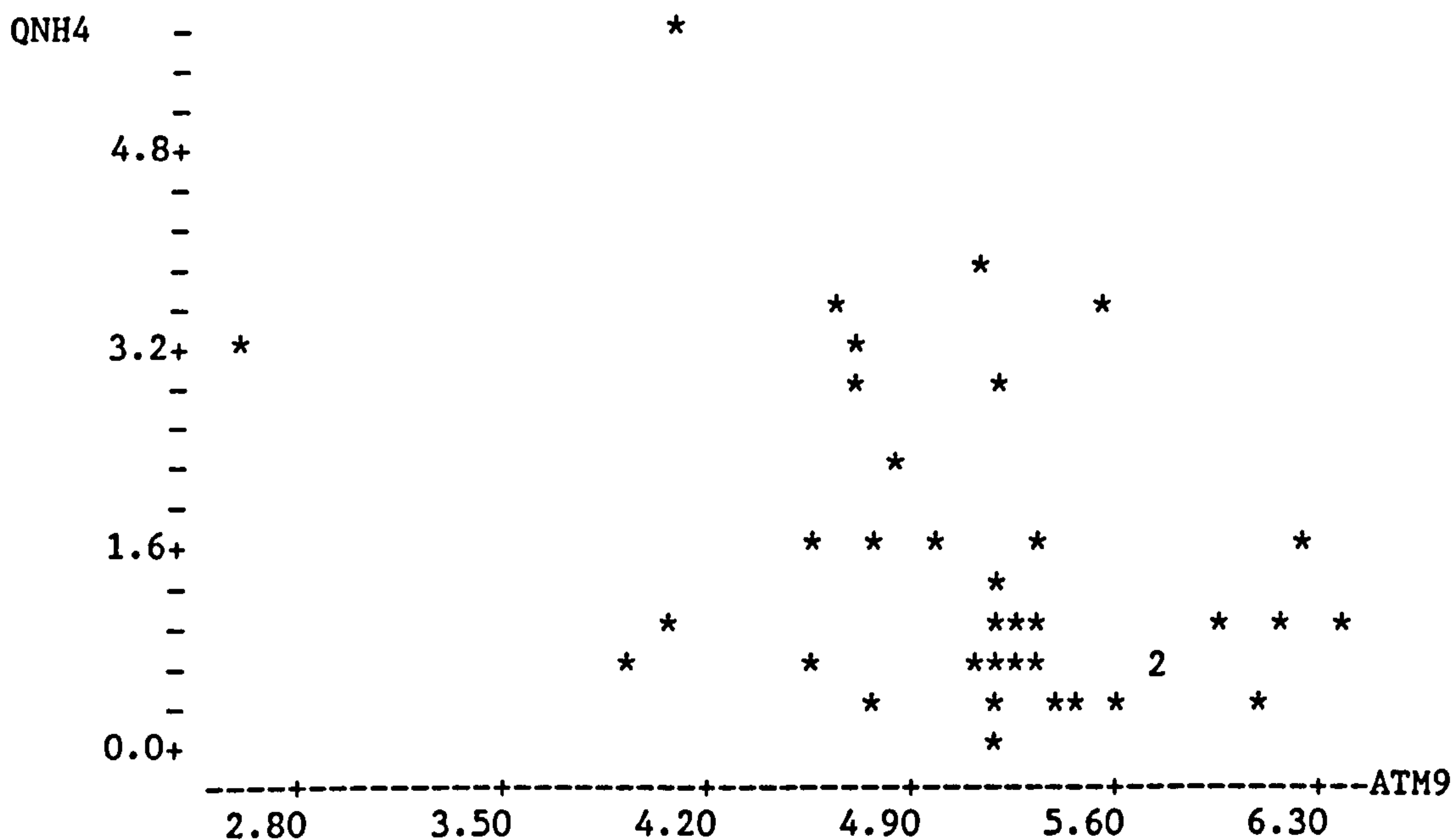
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 8.327 | 8.327 |
| Error | 35 | 49.978 | 1.428 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | ATM8 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 6 | 21.0 | 5.640 | 2.203 | 0.367 | 3.437 | 3.02R |
| 35 | 40.1 | 3.500 | 0.996 | 0.273 | 2.504 | 2.15R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C114 and C108 = -0.344



Correlation of QNH4 and ATM9 = -0.435

The regression equation is
 QNH4 = 5.38 - 0.769 ATM9

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 5.383 | 1.389 | 3.88 |
| ATM9 | -0.7690 | 0.2693 | -2.86 |

s = 1.162 R-sq = 18.9% R-sq(adj) = 16.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 11.014 | 11.014 |
| Error | 35 | 47.291 | 1.351 |
| Total | 36 | 58.305 | |

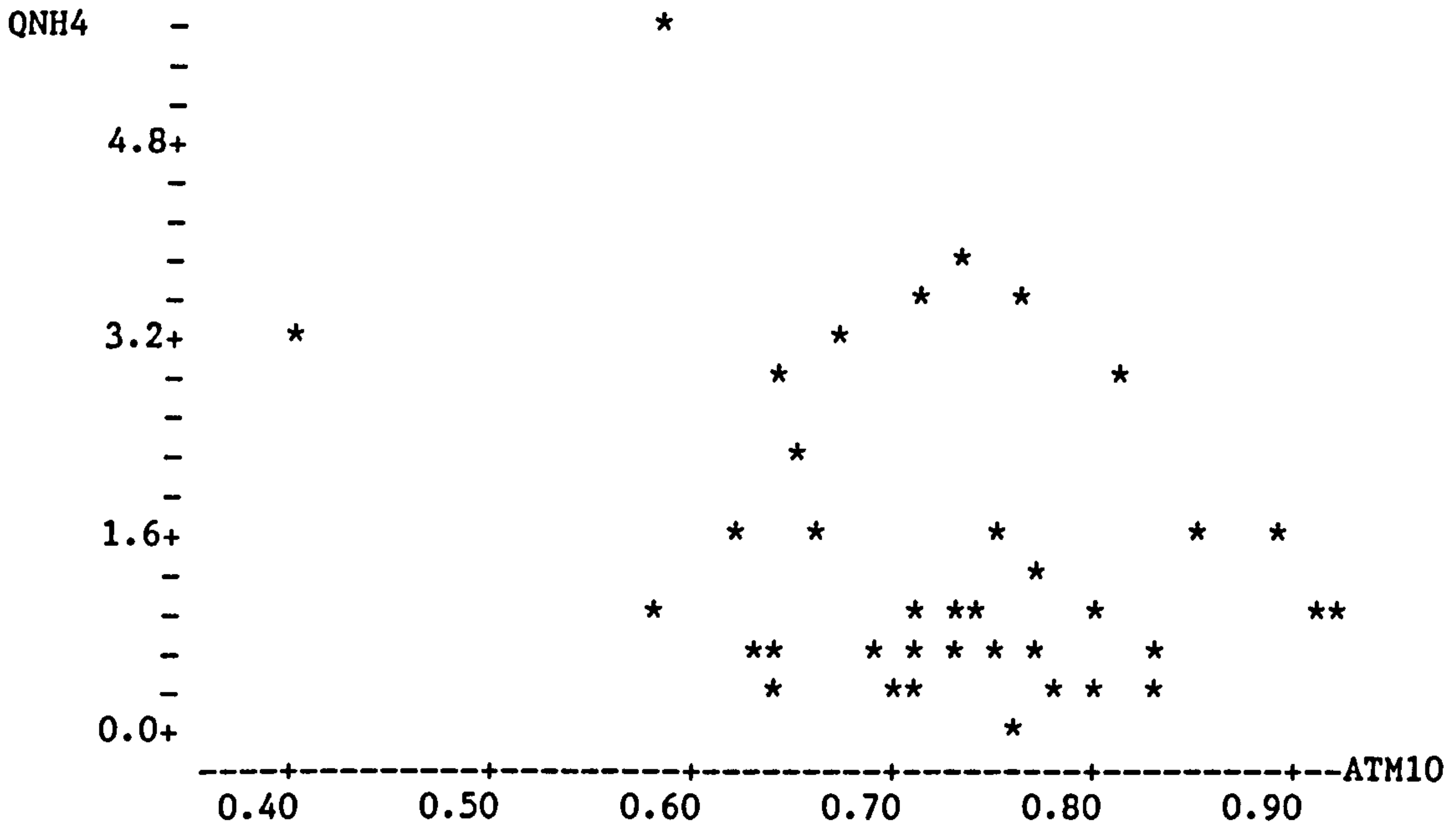
Unusual Observations

| Obs. | ATM9 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 3 | 2.62 | 3.210 | 3.372 | 0.698 | -0.162 | -0.17 X |
| 6 | 4.06 | 5.640 | 2.261 | 0.341 | 3.379 | 3.04R |
| 23 | 5.12 | 3.760 | 1.444 | 0.191 | 2.316 | 2.02R |
| 35 | 5.55 | 3.500 | 1.114 | 0.225 | 2.386 | 2.09R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C114 and C109 = -0.394



Correlation of QNH4 and ATM10 = -0.352

The regression equation is
 QNH4 = 4.64 - 4.39 ATM10

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 4.641 | 1.448 | 3.21 |
| ATM10 | -4.390 | 1.976 | -2.22 |

s = 1.208 R-sq = 12.4% R-sq(adj) = 9.9%

Analysis of Variance

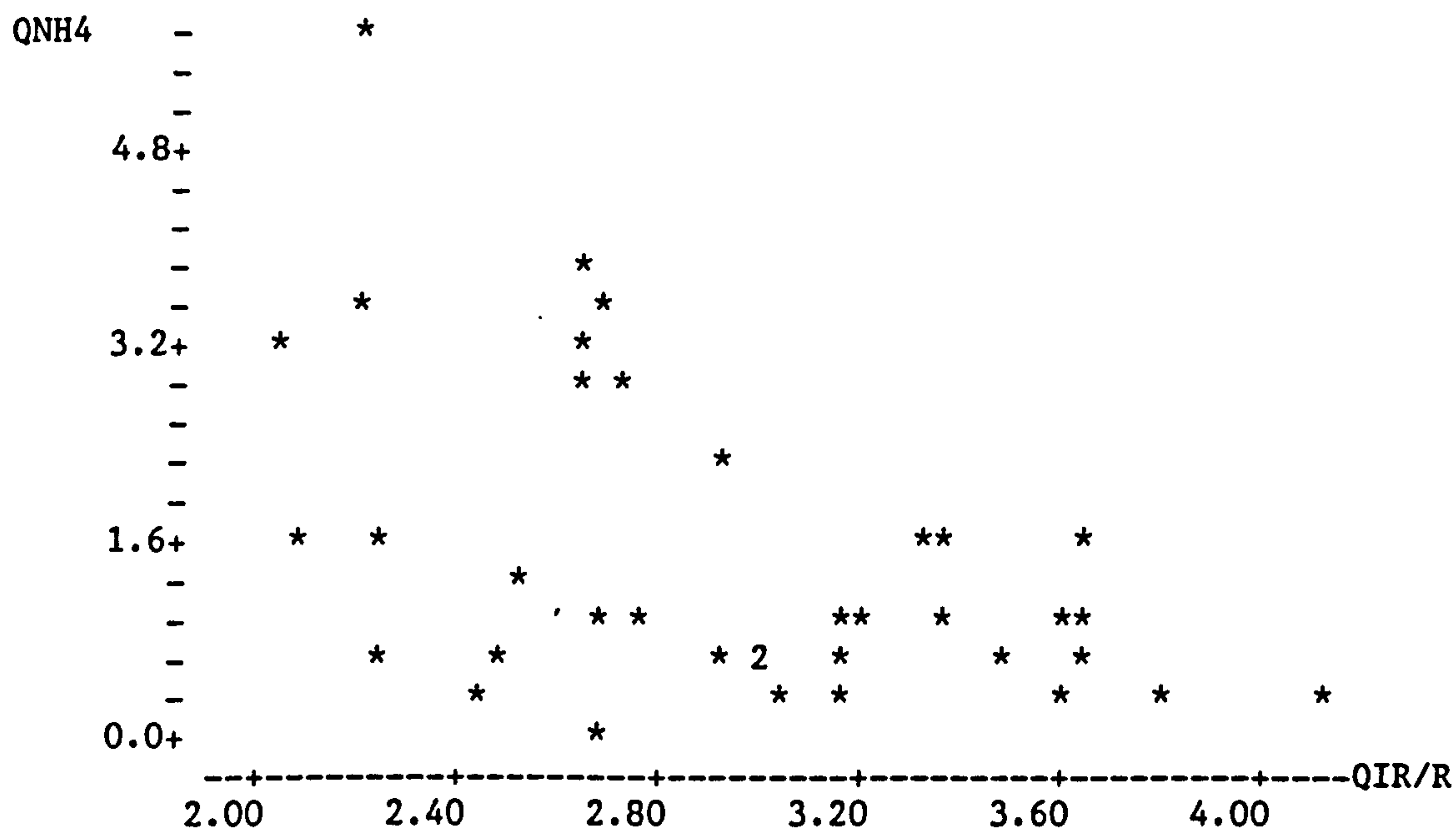
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 7.204 | 7.204 |
| Error | 35 | 51.101 | 1.460 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | ATM10 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 3 | 0.397 | 3.210 | 2.899 | 0.679 | 0.311 | 0.31 X |
| 6 | 0.583 | 5.640 | 2.083 | 0.345 | 3.557 | 3.07R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C114 and C110 = -0.232



Correlation of QNH4 and QIR/R = -0.514

The regression equation is
 $QNH4 = 5.05 - 1.22 QIR/R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 5.052 | 1.031 | 4.90 |
| QIR/R | -1.2205 | 0.3445 | -3.54 |

$s = 1.107$ $R-sq = 26.4\%$ $R-sq(adj) = 24.3\%$

Analysis of Variance

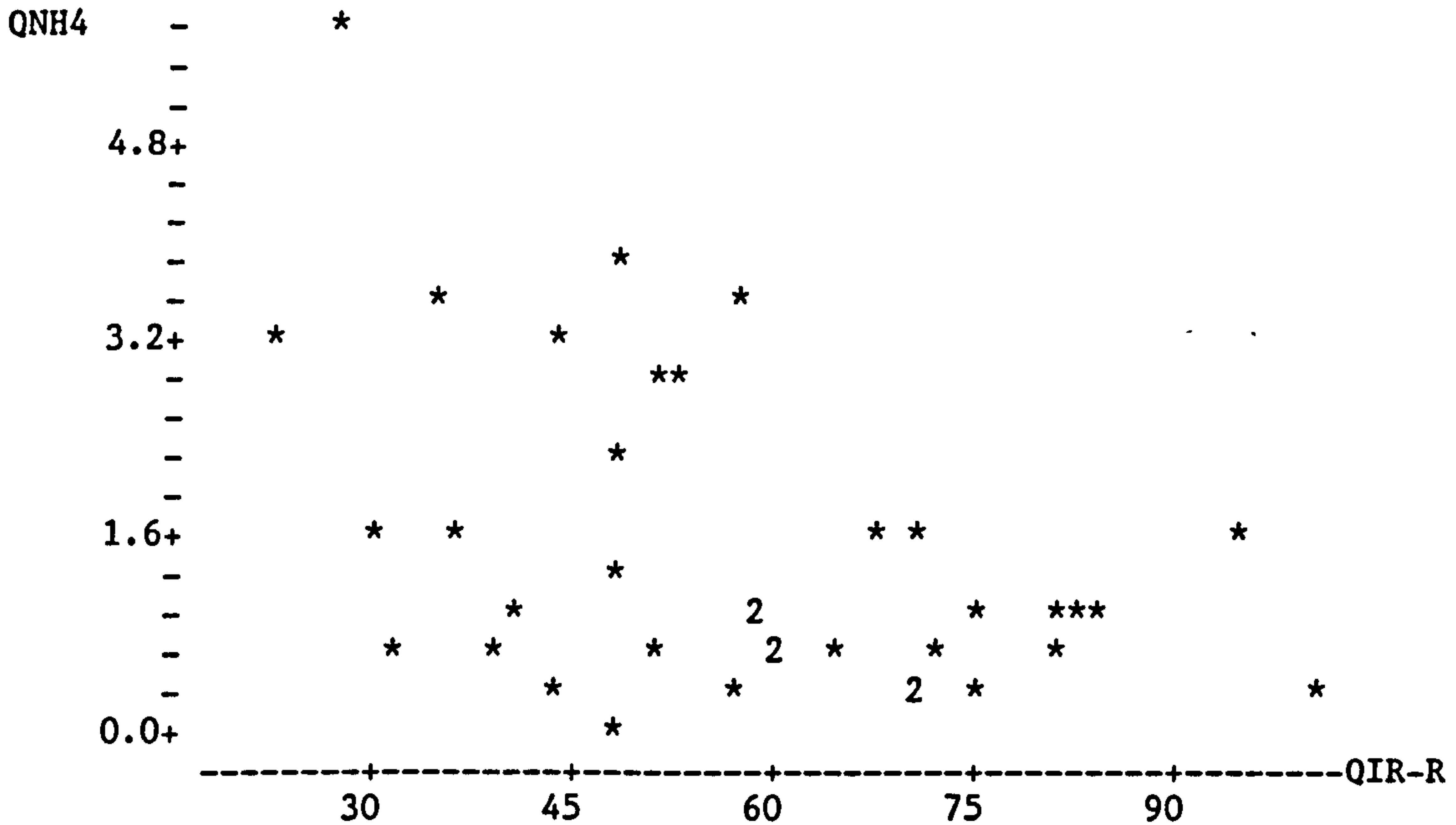
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 15.393 | 15.393 |
| Error | 35 | 42.912 | 1.226 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | QIR/R | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 2.18 | 5.640 | 2.387 | 0.320 | 3.253 | 3.07R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C114 and C146 = -0.466



Correlation of QNH4 and QIR-R = -0.486

The regression equation is
 $QNH4 = 3.32 - 0.0323 QIR-R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 3.3195 | 0.5963 | 5.57 |
| QIR-R | -0.032299 | 0.009821 | -3.29 |

s = 1.128 R-sq = 23.6% R-sq(adj) = 21.4%

Analysis of Variance

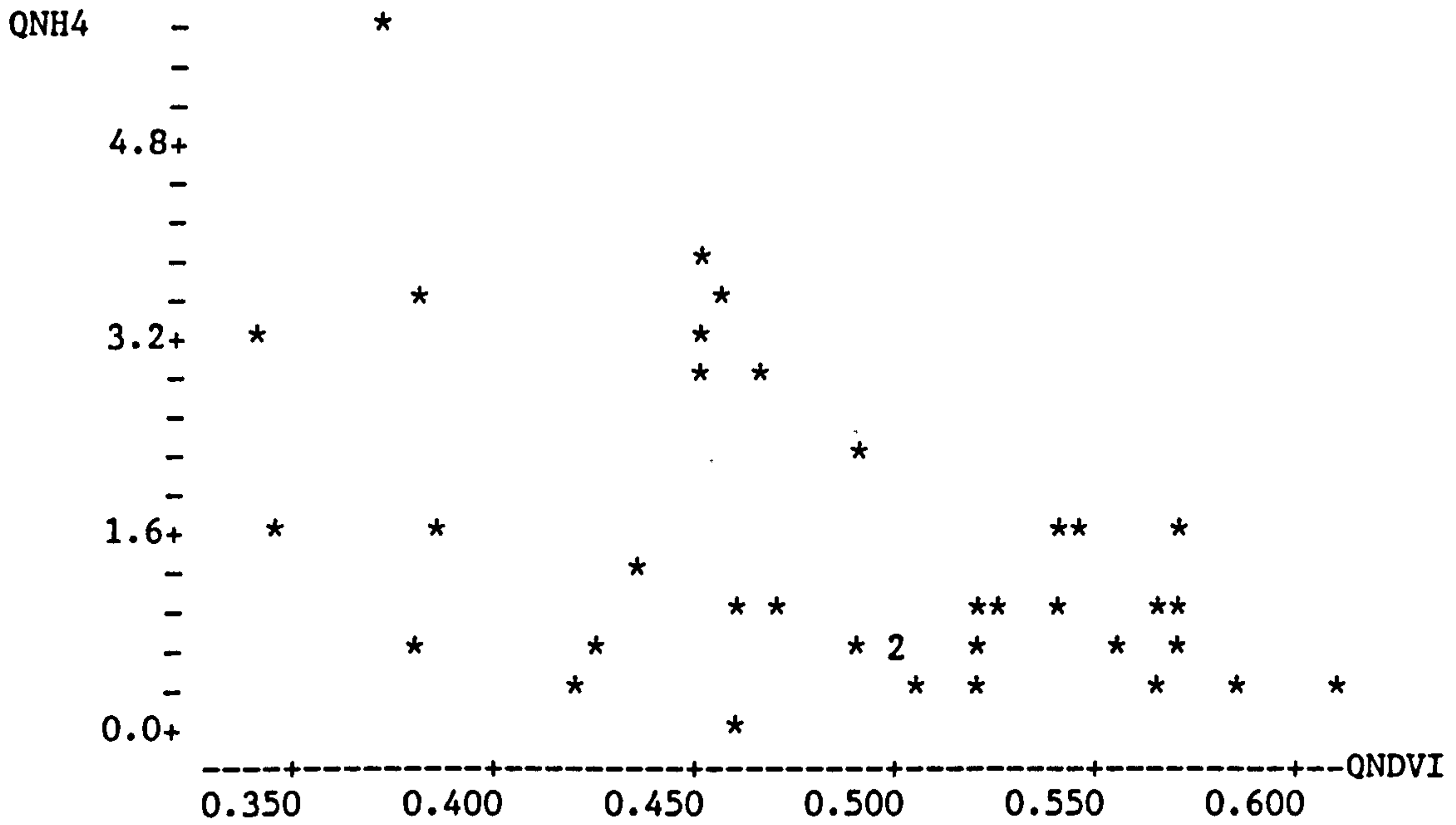
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 13.764 | 13.764 |
| Error | 35 | 44.540 | 1.273 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | QIR-R | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 27 | 5.640 | 2.459 | 0.357 | 3.181 | 2.97R |
| 28 | 101 | 0.220 | 0.058 | 0.464 | 0.162 | 0.16 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C114 and C147 = -0.413



Correlation of QNH4 and QNDVI = -0.524

The regression equation is
 QNH4 = 6.01 - 9.40 QNDVI

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 6.006 | 1.263 | 4.76 |
| QNDVI | -9.401 | 2.582 | -3.64 |

s = 1.099 R-sq = 27.5% R-sq(adj) = 25.4%

Analysis of Variance

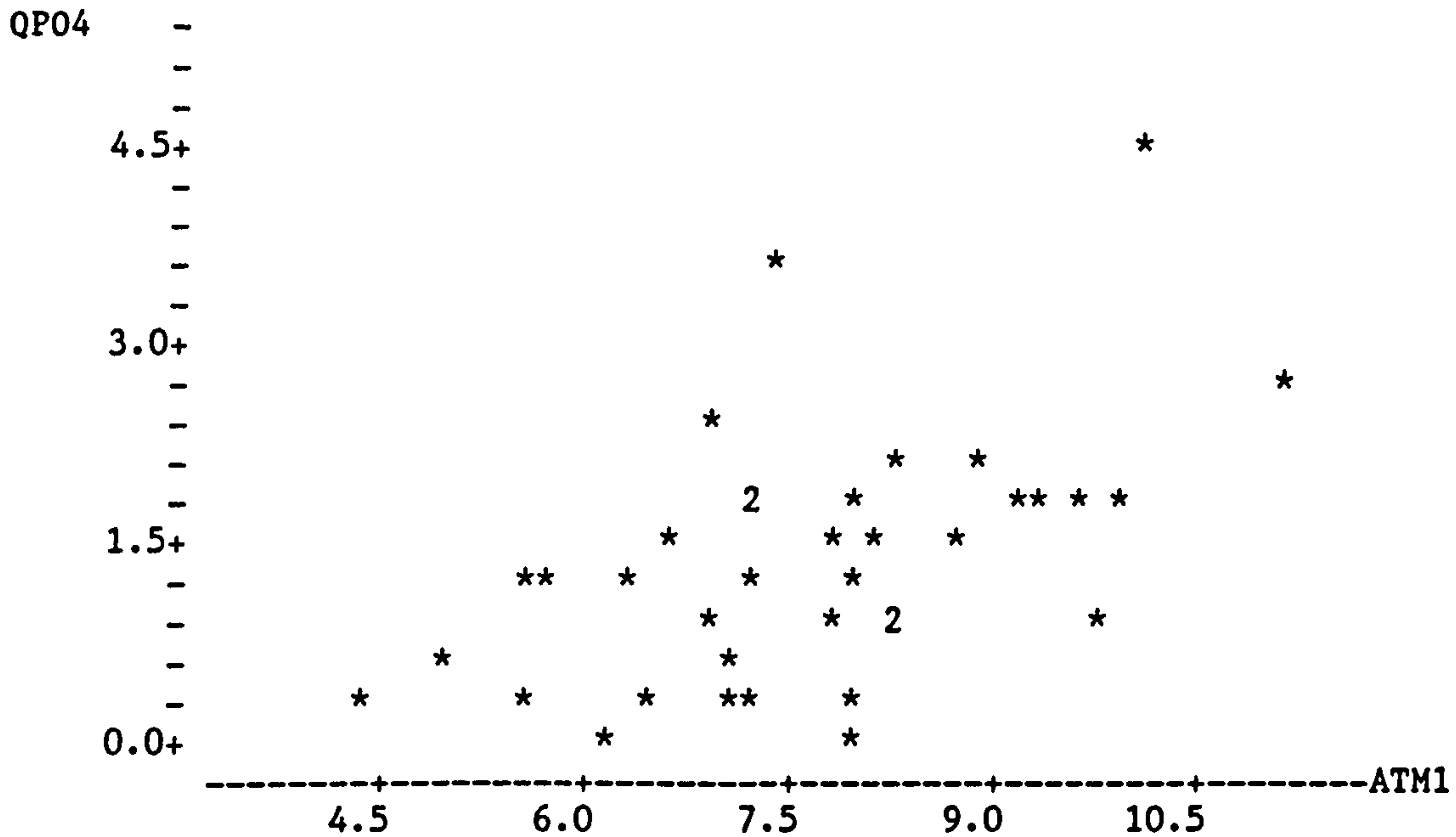
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 16.017 | 16.017 |
| Error | 35 | 42.288 | 1.208 |
| Total | 36 | 58.305 | |

Unusual Observations

| Obs. | QNDVI | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 0.372 | 5.640 | 2.510 | 0.341 | 3.130 | 3.00R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C114 and C148 = -0.466



Correlation of QP04 and ATM1 = 0.503

The regression equation is
 QP04 = -.1.09 + 0.320 ATM1

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -1.0939 | 0.7212 | -1.52 |
| ATM1 | 0.32034 | 0.09293 | 3.45 |

s = 0.8313 R-sq = 25.3% R-sq(adj) = 23.2%

Analysis of Variance

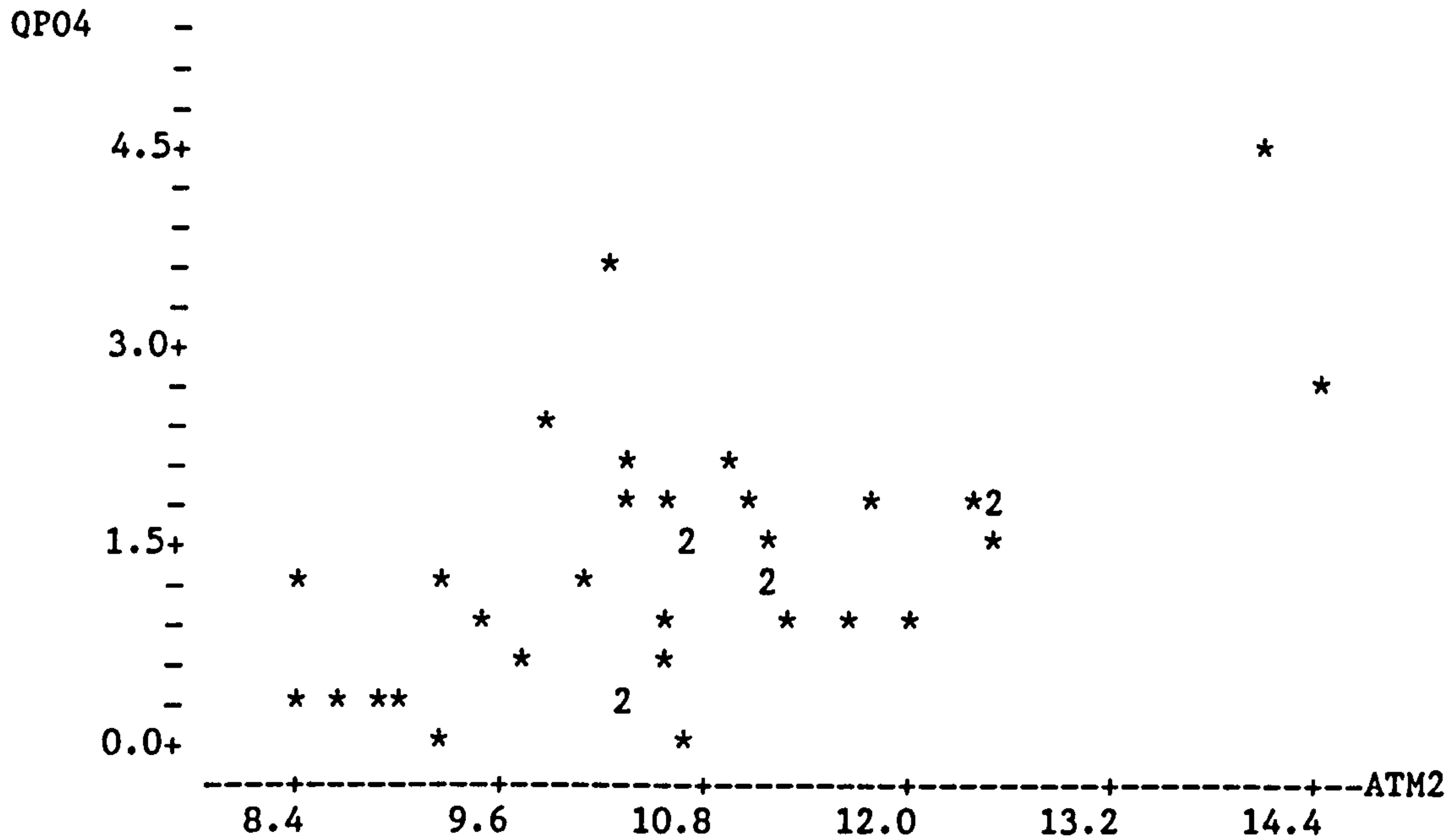
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 8.2106 | 8.2106 |
| Error | 35 | 24.1870 | 0.6911 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM1 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 11.1 | 2.600 | 2.460 | 0.350 | 0.140 | 0.19 X |
| 12 | 10.1 | 4.380 | 2.149 | 0.270 | 2.231 | 2.84R |
| 34 | 7.4 | 3.700 | 1.263 | 0.139 | 2.437 | 2.97R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C101 = 0.491



Correlation of QP04 and ATM2 = 0.560

The regression equation is
 QP04 = - 2.67 + 0.375 ATM2

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -2.671 | 1.014 | -2.63 |
| ATM2 | 0.37520 | 0.09392 | 3.99 |

s = 0.7974 R-sq = 31.3% R-sq(adj) = 29.4%

Analysis of Variance

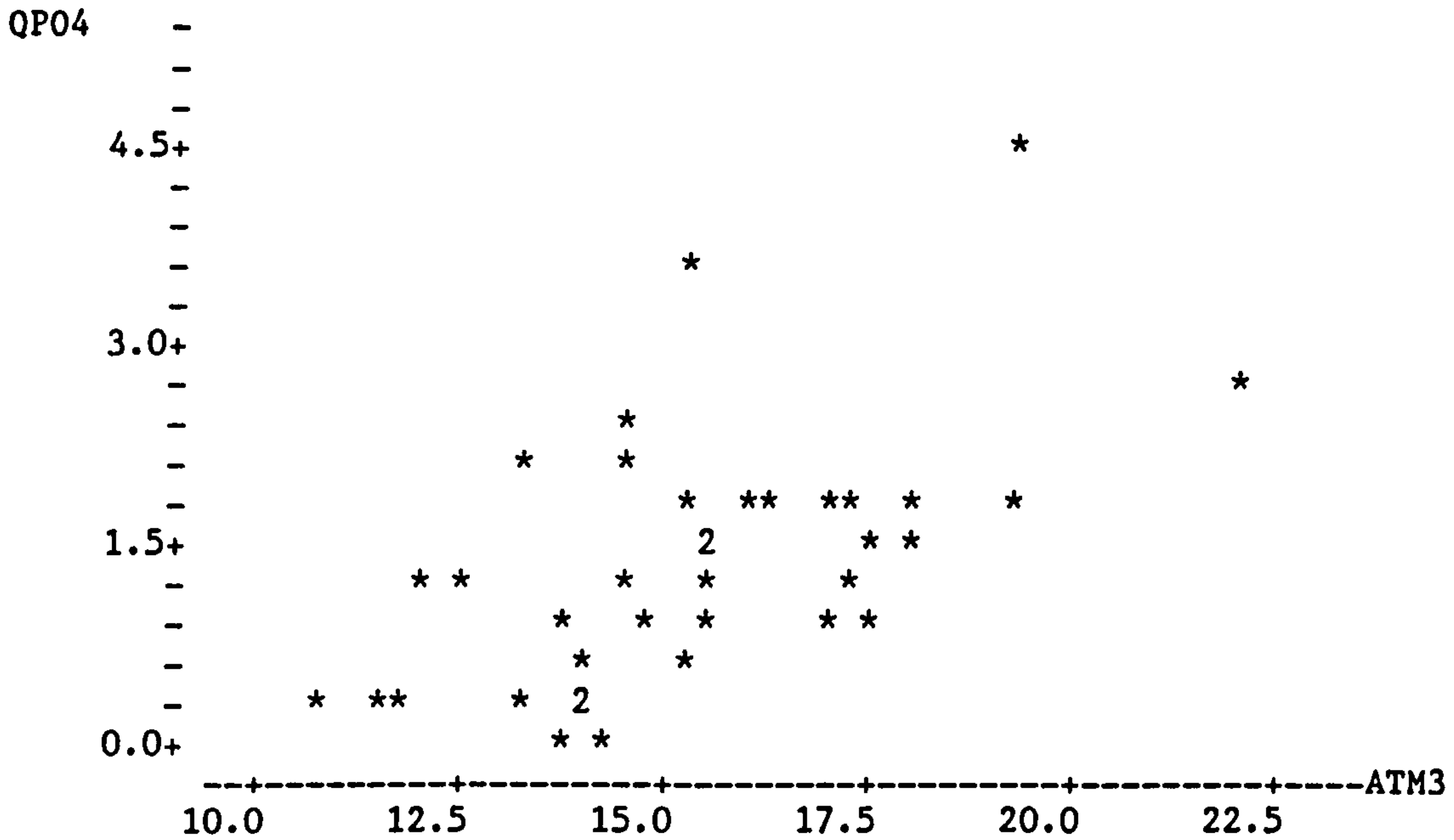
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 10.146 | 10.146 |
| Error | 35 | 22.252 | 0.636 |
| Total | 36 | 32.398 | |

Unusual Observations

| Obs. | ATM2 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 14.4 | 2.600 | 2.741 | 0.373 | -0.141 | -0.20 X |
| 12 | 14.0 | 4.380 | 2.583 | 0.336 | 1.797 | 2.49RX |
| 34 | 10.2 | 3.700 | 1.159 | 0.139 | 2.541 | 3.24R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C102 = 0.476



Correlation of QP04 and ATM3 = 0.543

The regression equation is
 QP04 = - 1.99 + 0.217 ATM3

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -1.9856 | 0.8804 | -2.26 |
| ATM3 | 0.21750 | 0.05680 | 3.83 |

s = 0.8077 R-sq = 29.5% R-sq(adj) = 27.5%

Analysis of Variance

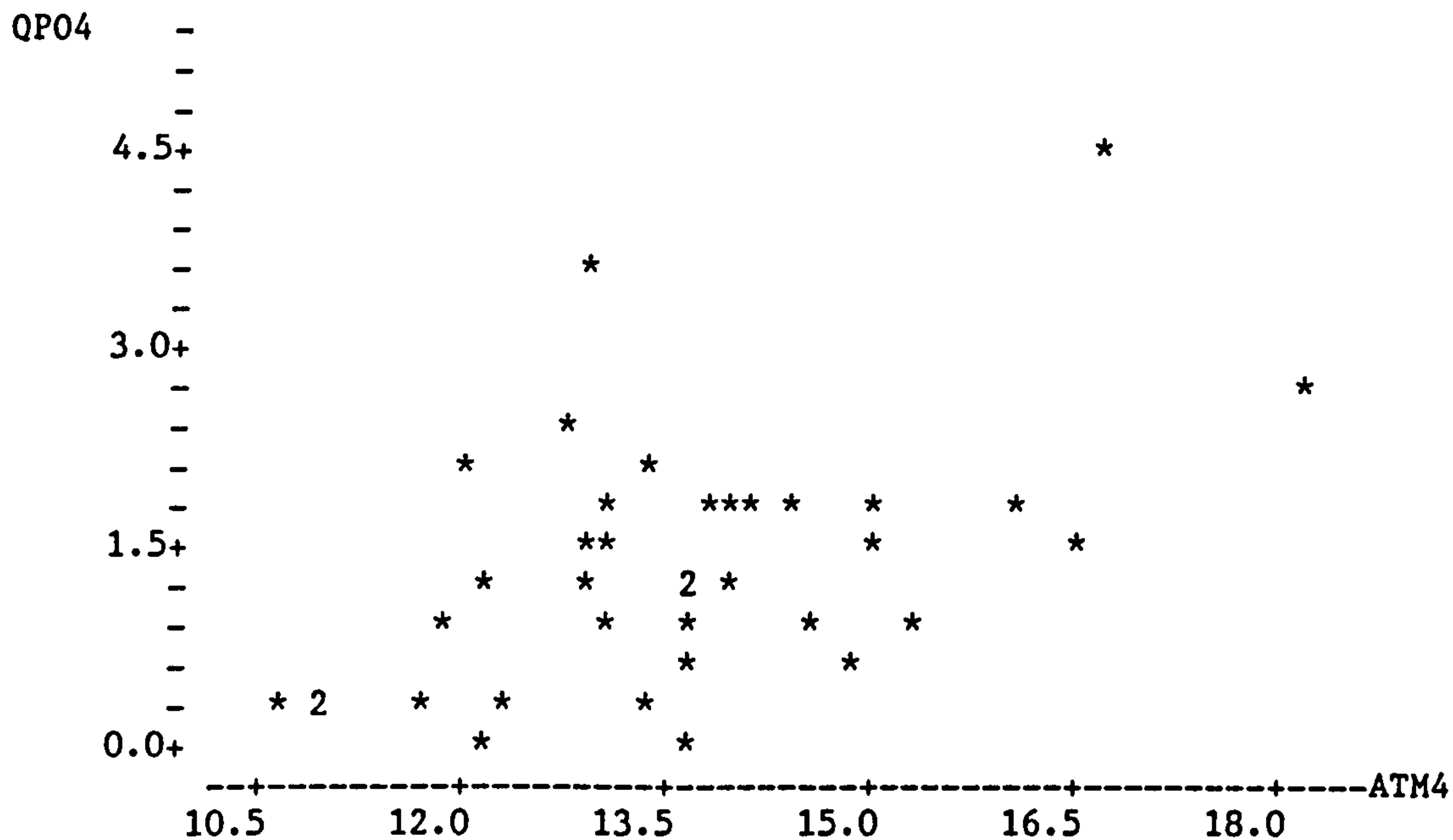
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 9.5643 | 9.5643 |
| Error | 35 | 22.8333 | 0.6524 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM3 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 22.1 | 2.600 | 2.817 | 0.406 | -0.217 | -0.31 X |
| 12 | 19.1 | 4.380 | 2.179 | 0.255 | 2.201 | 2.87R |
| 34 | 15.4 | 3.700 | 1.358 | 0.133 | 2.342 | 2.94R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C103 = 0.539



Correlation of QP04 and ATM4 = 0.468

The regression equation is
 QP04 = - 2.35 + 0.272 ATM4

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -2.346 | 1.186 | -1.98 |
| ATM4 | 0.27179 | 0.08668 | 3.14 |

s = 0.8501 R-sq = 21.9% R-sq(adj) = 19.7%

Analysis of Variance

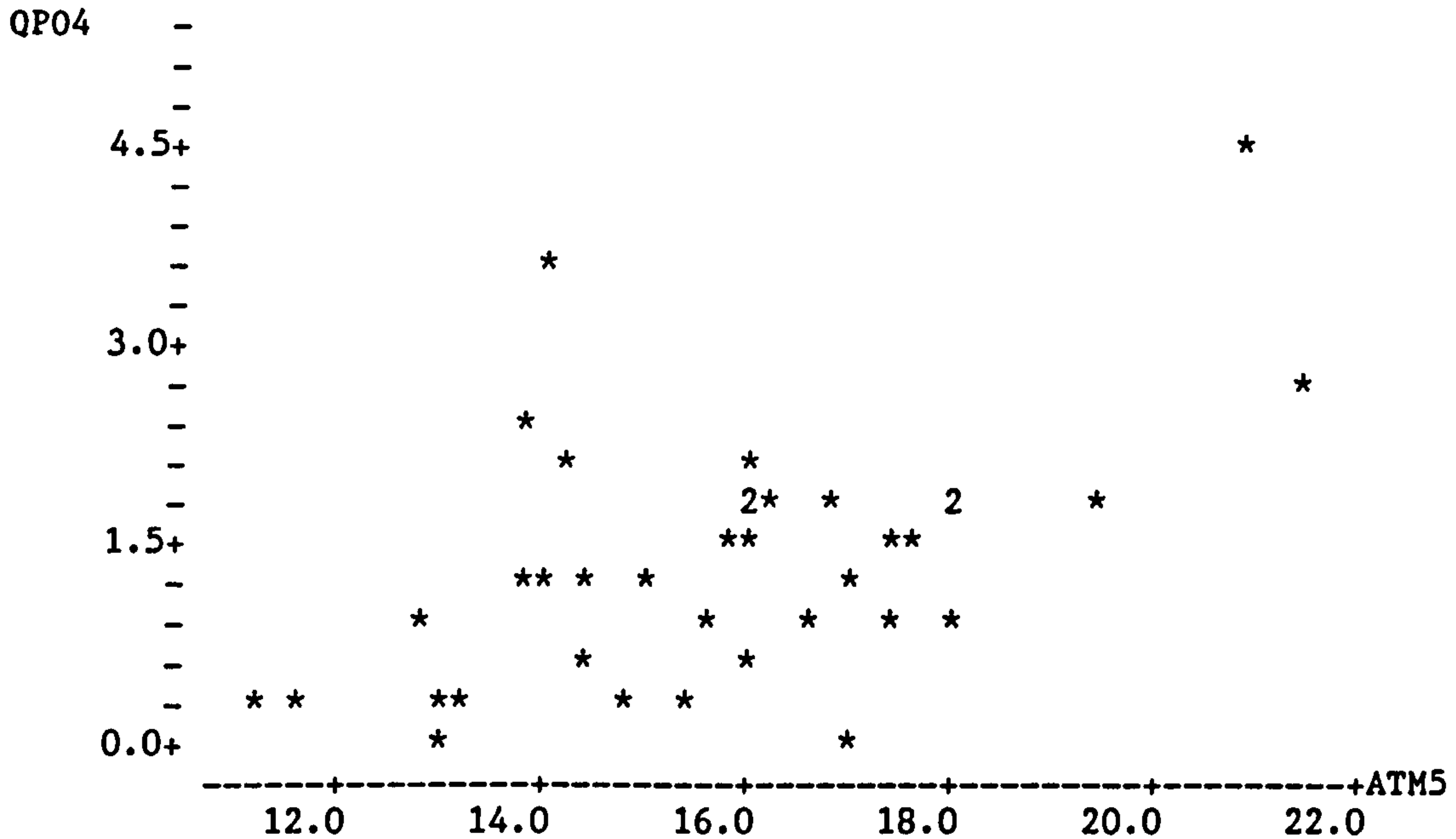
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 7.1043 | 7.1043 |
| Error | 35 | 25.2932 | 0.7227 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM4 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 18.1 | 2.600 | 2.577 | 0.417 | 0.023 | 0.03 X |
| 12 | 16.6 | 4.380 | 2.176 | 0.299 | 2.204 | 2.77R |
| 34 | 12.9 | 3.700 | 1.158 | 0.152 | 2.542 | 3.04R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C104 = 0.377



Correlation of QP04 and ATM5 = 0.487

The regression equation is
 QP04 = - 1.80 + 0.200 ATM5

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -1.7975 | 0.9636 | -1.87 |
| ATM5 | 0.19992 | 0.06063 | 3.30 |

s = 0.8404 R-sq = 23.7% R-sq(adj) = 21.5%

Analysis of Variance

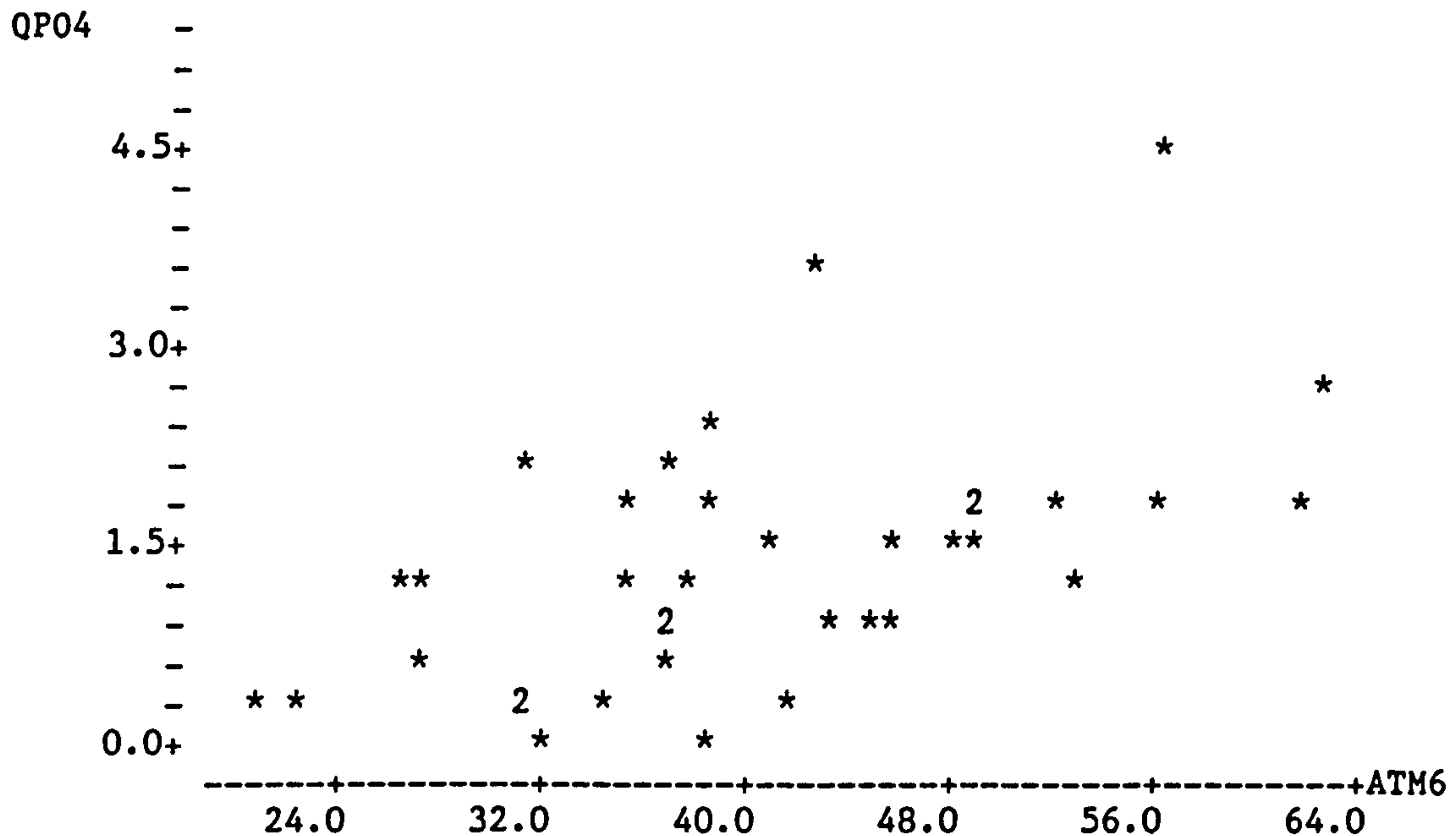
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 7.6792 | 7.6792 |
| Error | 35 | 24.7184 | 0.7062 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM5 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 21.5 | 2.600 | 2.499 | 0.376 | 0.101 | 0.13 X |
| 12 | 20.8 | 4.380 | 2.362 | 0.337 | 2.018 | 2.62R |
| 34 | 14.0 | 3.700 | 1.010 | 0.172 | 2.690 | 3.27R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C105 = 0.409



Correlation of QP04 and ATM6 = 0.526

The regression equation is
 QP04 = - 0.614 + 0.0485 ATM6

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -0.6142 | 0.5528 | -1.11 |
| ATM6 | 0.04854 | 0.01327 | 3.66 |

s = 0.8184 R-sq = 27.7% R-sq(adj) = 25.6%

Analysis of Variance

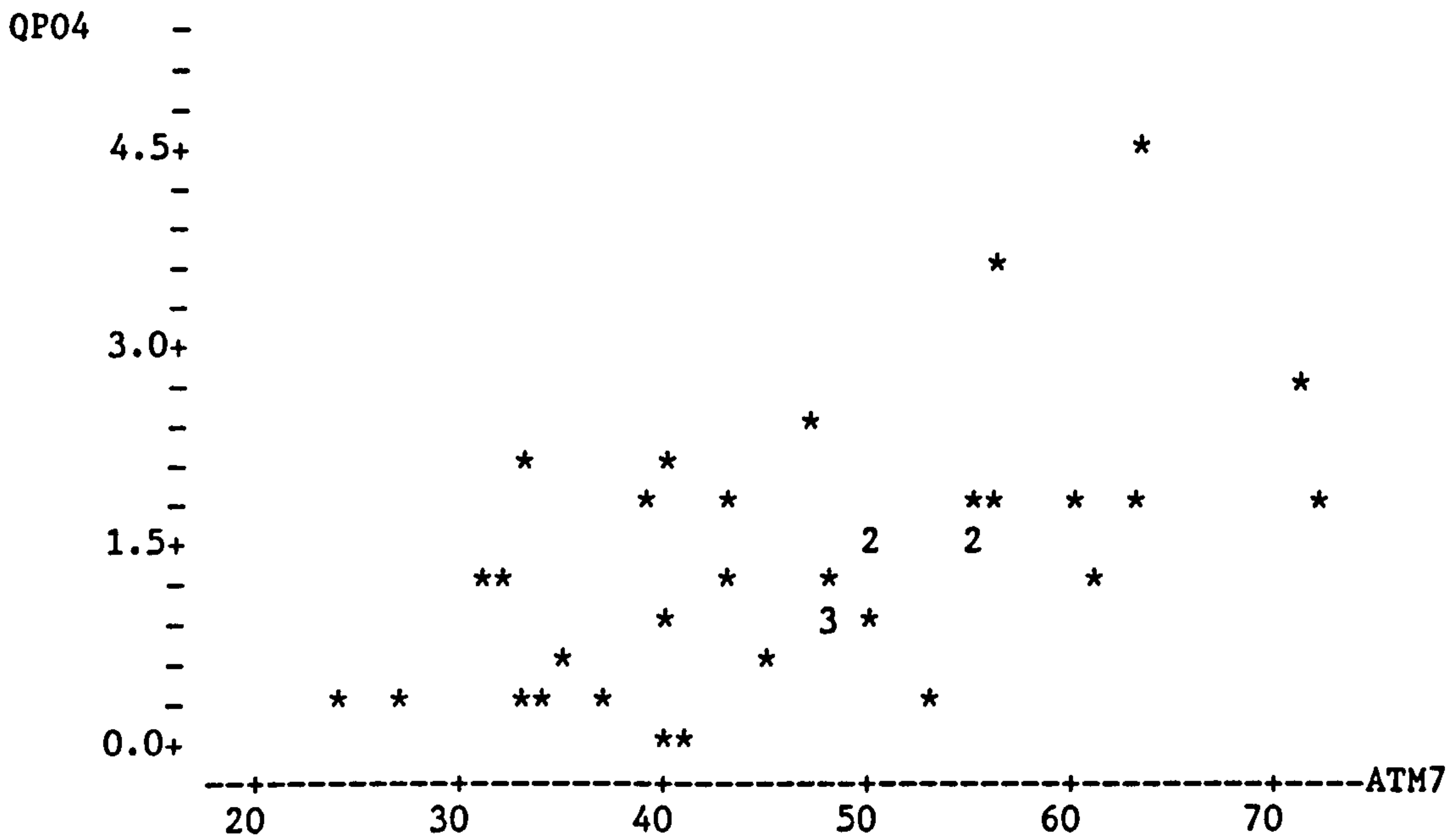
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 8.9581 | 8.9581 |
| Error | 35 | 23.4395 | 0.6697 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM6 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 12 | 55.7 | 4.380 | 2.088 | 0.243 | 2.292 | 2.93R |
| 34 | 42.1 | 3.700 | 1.427 | 0.136 | 2.273 | 2.82R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C116 and C106 = 0.530



Correlation of QP04 and ATM7 = 0.547

The regression equation is
 QP04 = - 0.708 + 0.0441 ATM7

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -0.7075 | 0.5474 | -1.29 |
| ATM7 | 0.04407 | 0.01139 | 3.87 |

s = 0.8053 R-sq = 29.9% R-sq(adj) = 27.9%

Analysis of Variance

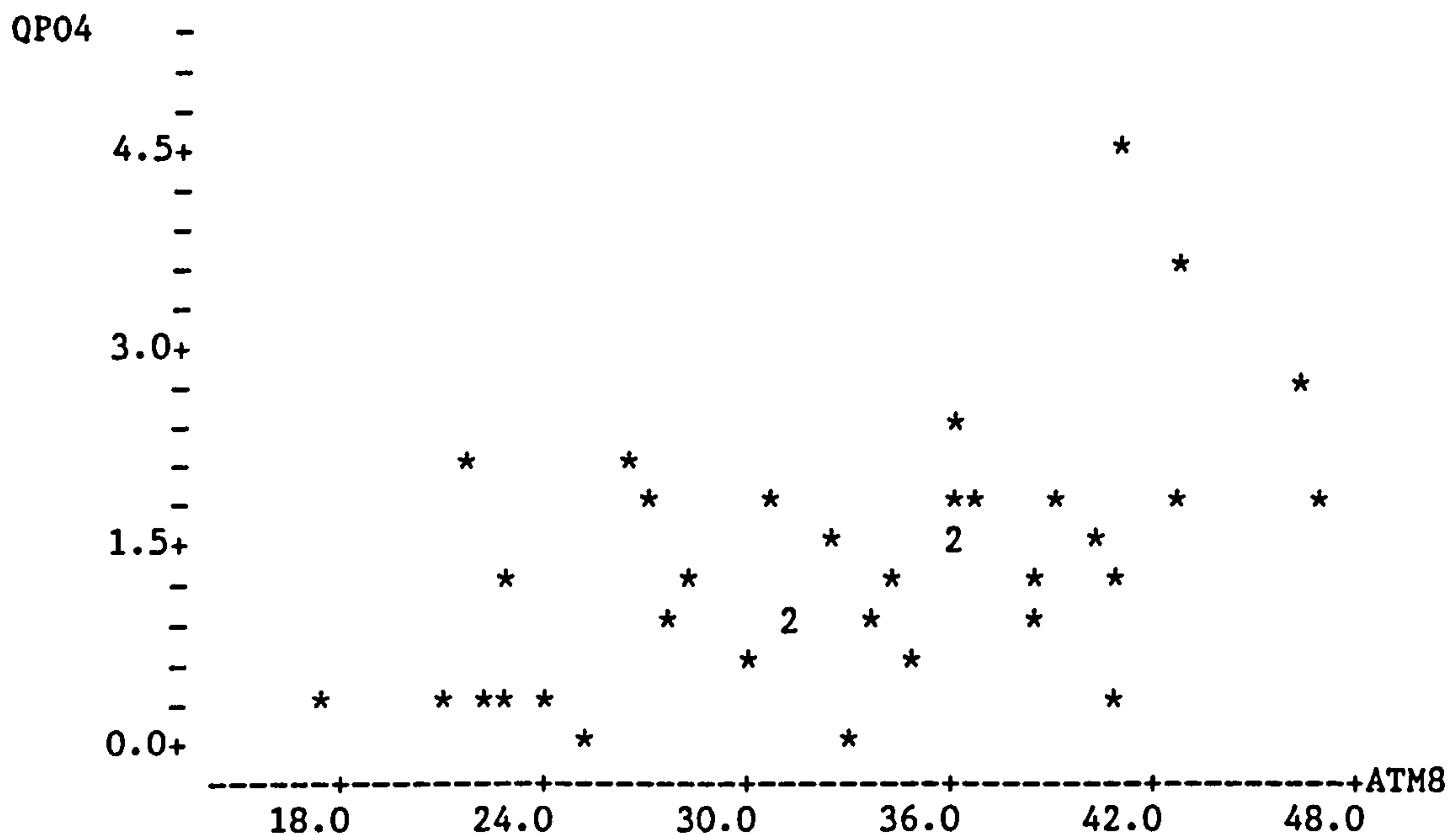
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 9.7013 | 9.7013 |
| Error | 35 | 22.6963 | 0.6485 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM7 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 12 | 62.8 | 4.380 | 2.062 | 0.227 | 2.318 | 3.00R |
| 34 | 55.7 | 3.700 | 1.749 | 0.168 | 1.951 | 2.48R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C116 and C107 = 0.527



Correlation of QP04 and ATM8 = 0.508

The regression equation is
 QP04 = - 0.732 + 0.0634 ATM8

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -0.7317 | 0.6104 | -1.20 |
| ATM8 | 0.06339 | 0.01814 | 3.49 |

s = 0.8285 R-sq = 25.9% R-sq(adj) = 23.7%

Analysis of Variance

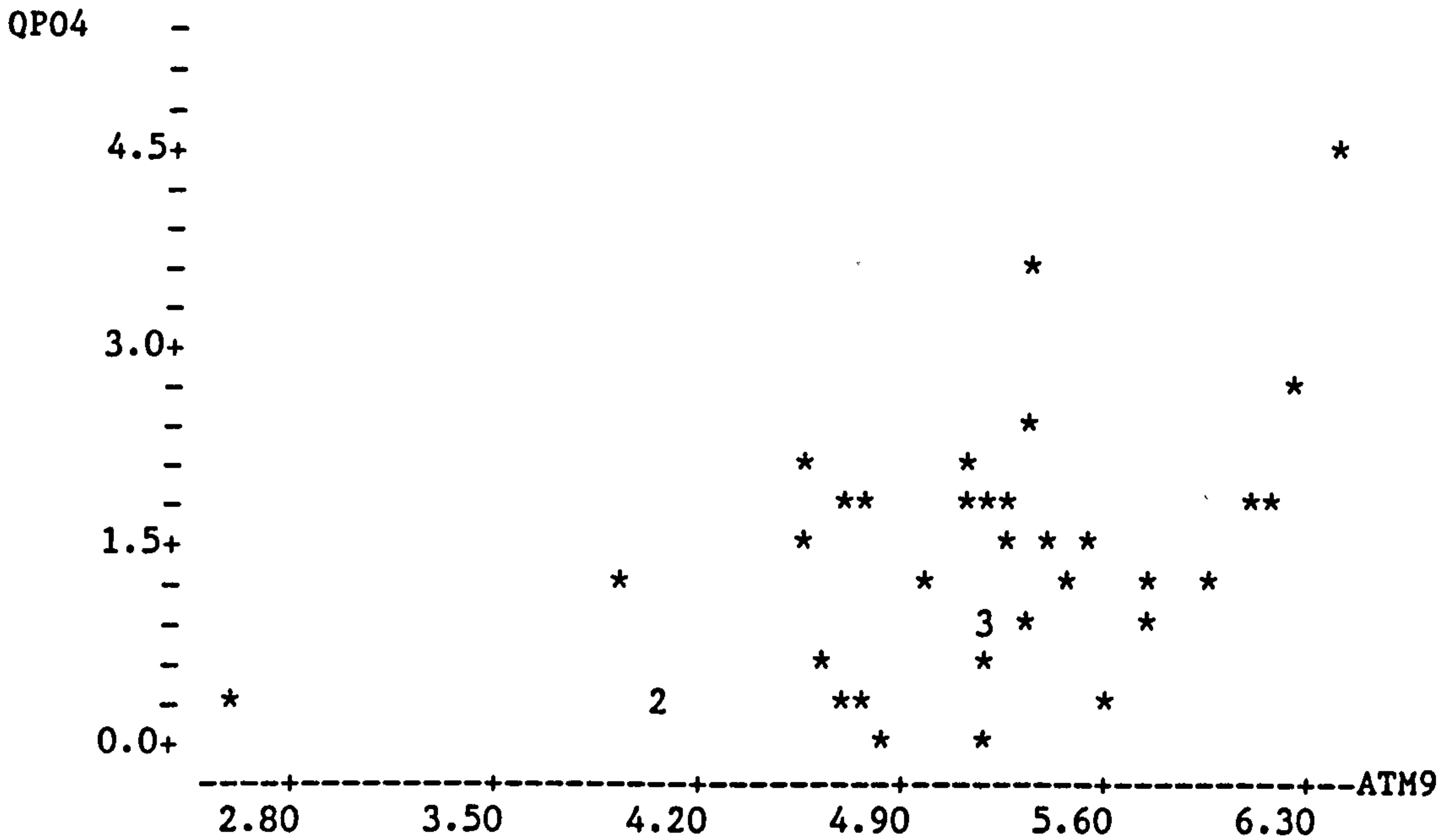
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 8.3759 | 8.3759 |
| Error | 35 | 24.0216 | 0.6863 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM8 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 7 | 40.6 | 0.160 | 1.840 | 0.196 | -1.680 | -2.09R |
| 12 | 41.1 | 4.380 | 1.873 | 0.203 | 2.507 | 3.12R |
| 34 | 42.6 | 3.700 | 1.971 | 0.225 | 1.729 | 2.17R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C116 and C108 = 0.485



Correlation of QP04 and ATM9 = 0.456

The regression equation is
 QP04 = - 1.72 + 0.601 ATM9

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -1.722 | 1.023 | -1.68 |
| ATM9 | 0.6008 | 0.1985 | 3.03 |

s = 0.8565 R-sq = 20.8% R-sq(adj) = 18.5%

Analysis of Variance

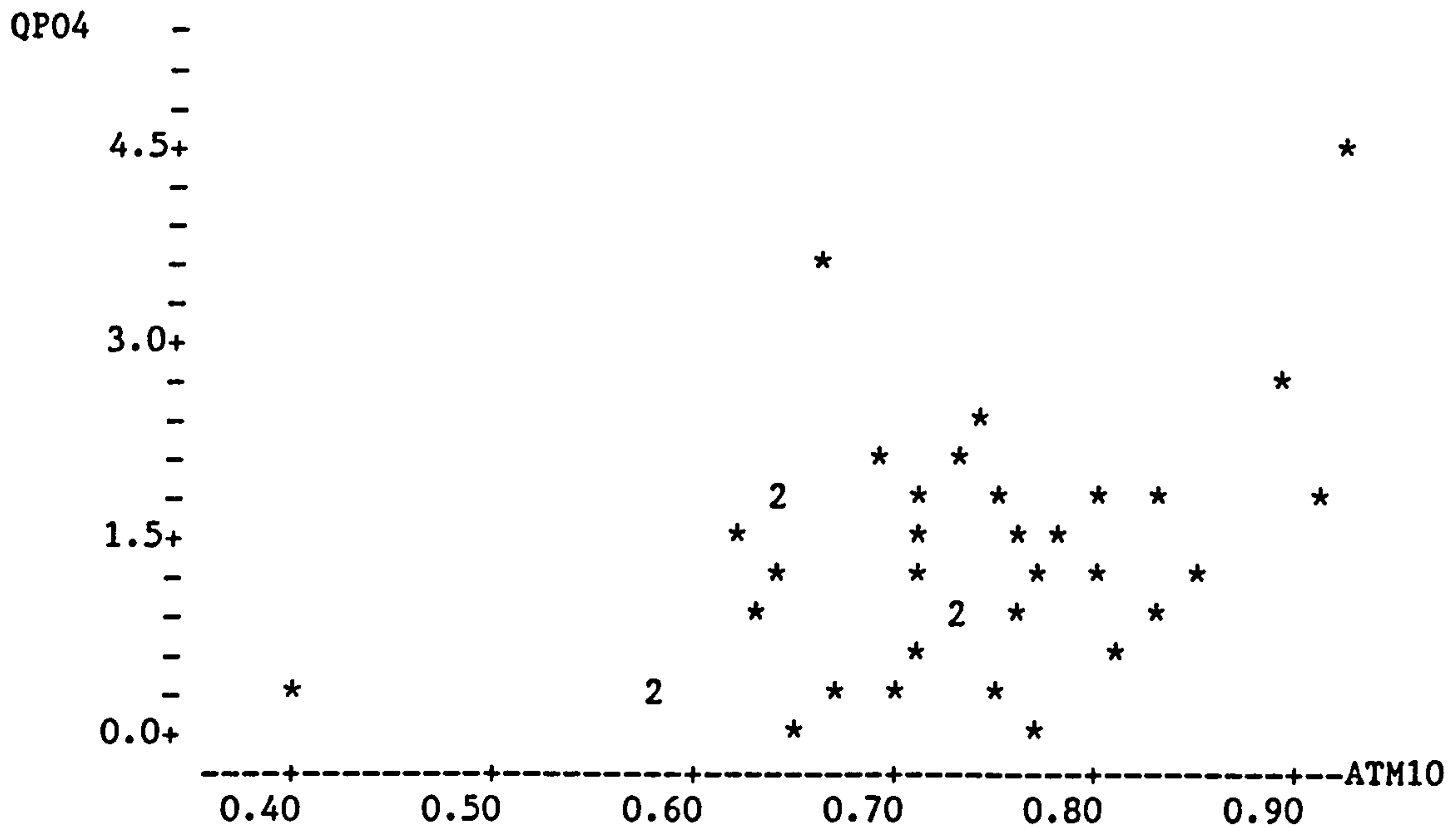
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 6.7230 | 6.7230 |
| Error | 35 | 25.6746 | 0.7336 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM9 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|--------|-----------|----------|----------|
| 3 | 2.62 | 0.340 | -0.150 | 0.514 | 0.490 | 0.72 X |
| 12 | 6.34 | 4.380 | 2.089 | 0.283 | 2.291 | 2.83R |
| 34 | 5.33 | 3.700 | 1.478 | 0.147 | 2.222 | 2.63R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C109 = 0.356



Correlation of QP04 and ATM10 = 0.388

The regression equation is
 QP04 = - 1.27 + 3.61 ATM10

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -1.272 | 1.063 | -1.20 |
| ATM10 | 3.609 | 1.450 | 2.49 |

s = 0.8869 R-sq = 15.0% R-sq(adj) = 12.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 4.8695 | 4.8695 |
| Error | 35 | 27.5280 | 0.7865 |
| Total | 36 | 32.3976 | |

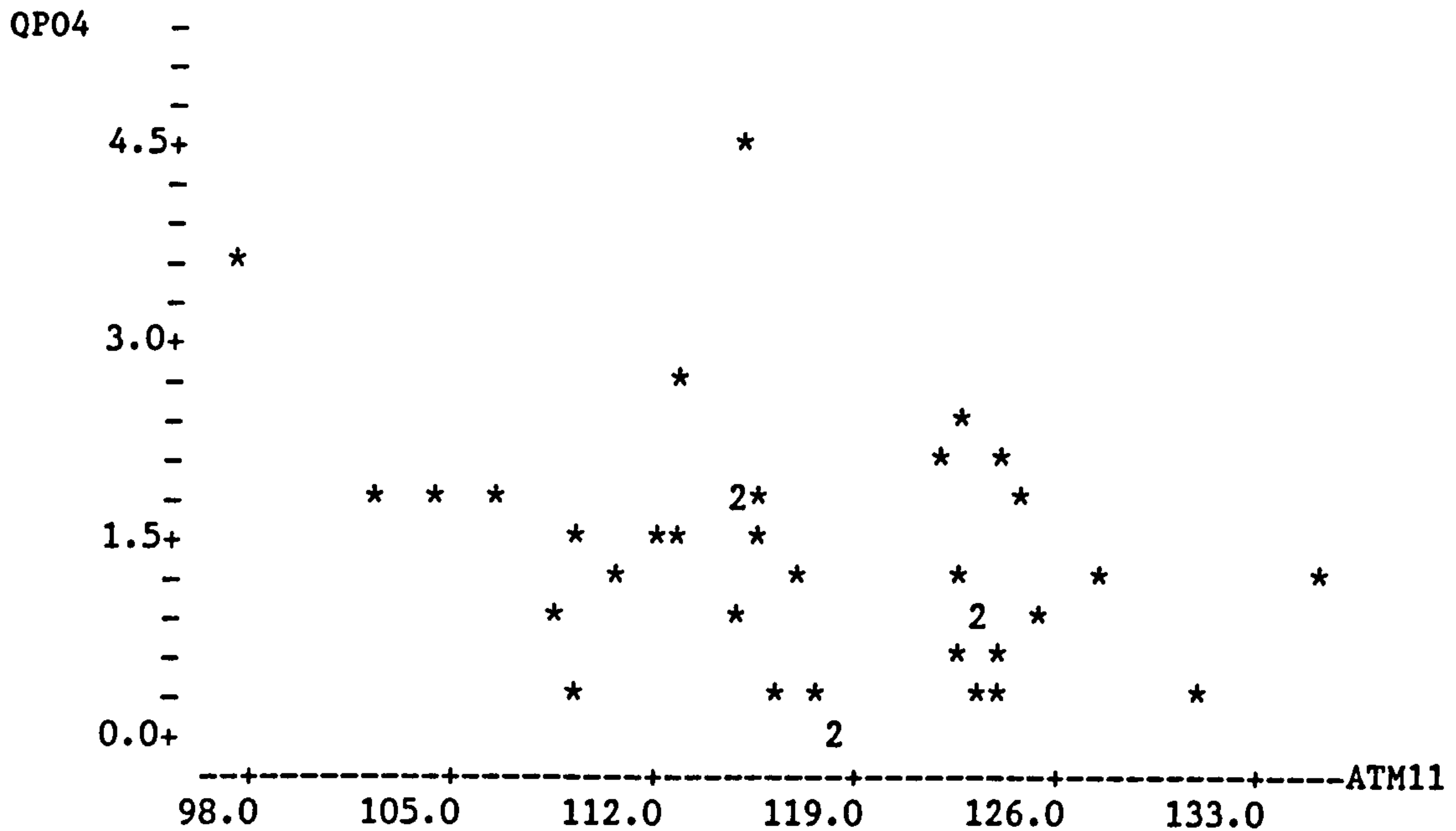
Unusual Observations

| Obs. | ATM10 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 3 | 0.397 | 0.340 | 0.160 | 0.499 | 0.180 | 0.24 X |
| 12 | 0.916 | 4.380 | 2.034 | 0.312 | 2.346 | 2.83R |
| 34 | 0.665 | 3.700 | 1.127 | 0.171 | 2.573 | 2.96R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C110 = 0.275



Correlation of QP04 and ATM11 = -0.380

The regression equation is
 QP04 = 6.55 - 0.0444 ATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 6.548 | 2.143 | 3.06 |
| ATM11 | -0.04438 | 0.01825 | -2.43 |

s = 0.8898 R-sq = 14.5% R-sq(adj) = 12.0%

Analysis of Variance

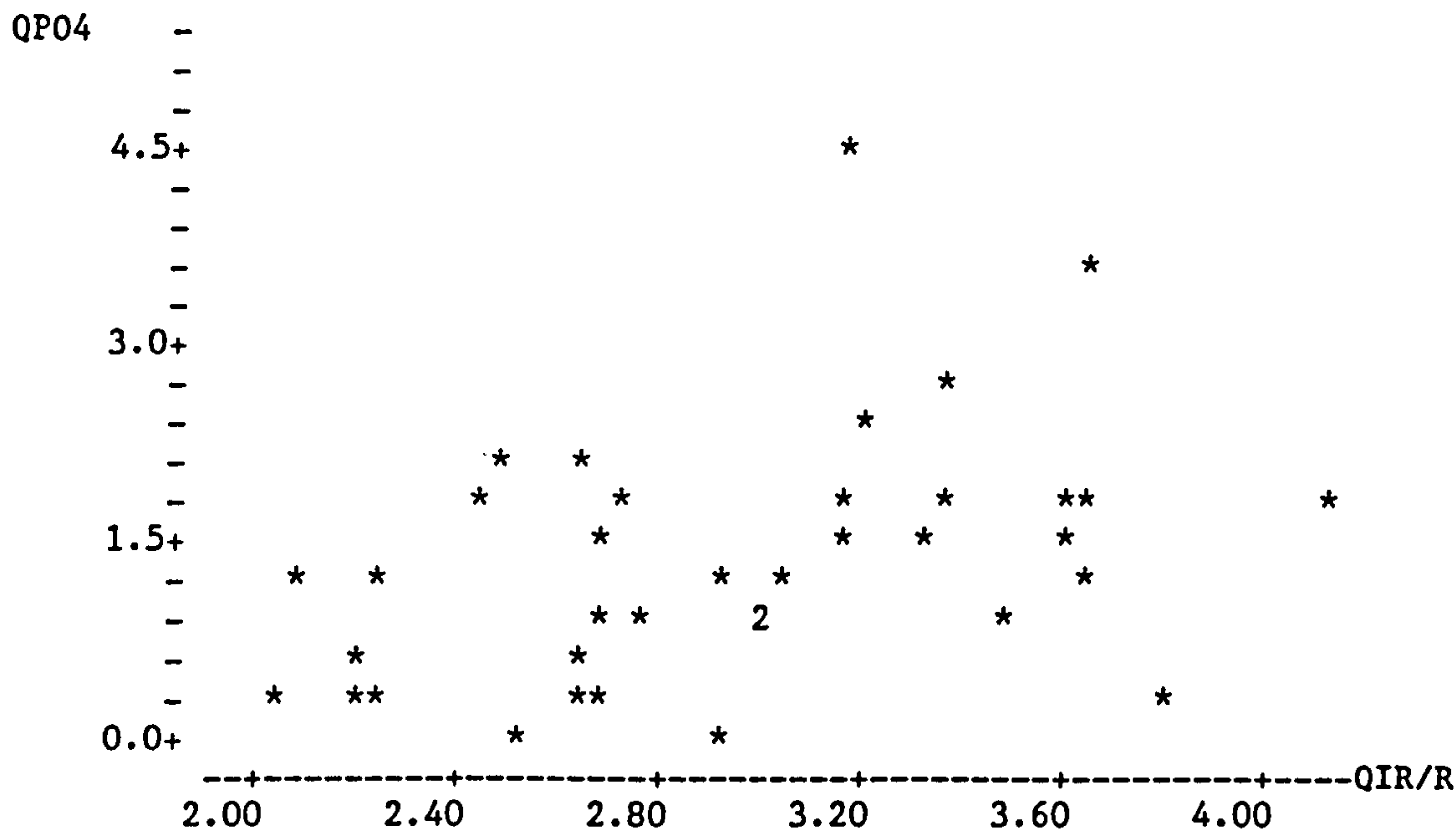
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 4.6850 | 4.6850 |
| Error | 35 | 27.7126 | 0.7918 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | ATM11 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 12 | 115 | 4.380 | 1.455 | 0.153 | 2.925 | 3.34R |
| 18 | 135 | 1.310 | 0.545 | 0.361 | 0.765 | 0.94 X |
| 34 | 97 | 3.700 | 2.243 | 0.396 | 1.457 | 1.83 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C111 = -0.353



Correlation of QP04 and QIR/R = 0.396

The regression equation is
 QP04 = - 0.721 + 0.702 QIR/R

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | -0.7210 | 0.8226 | -0.88 |
| QIR/R | 0.7018 | 0.2748 | 2.55 |

s = 0.8833 R-sq = 15.7% R-sq(adj) = 13.3%

Analysis of Variance

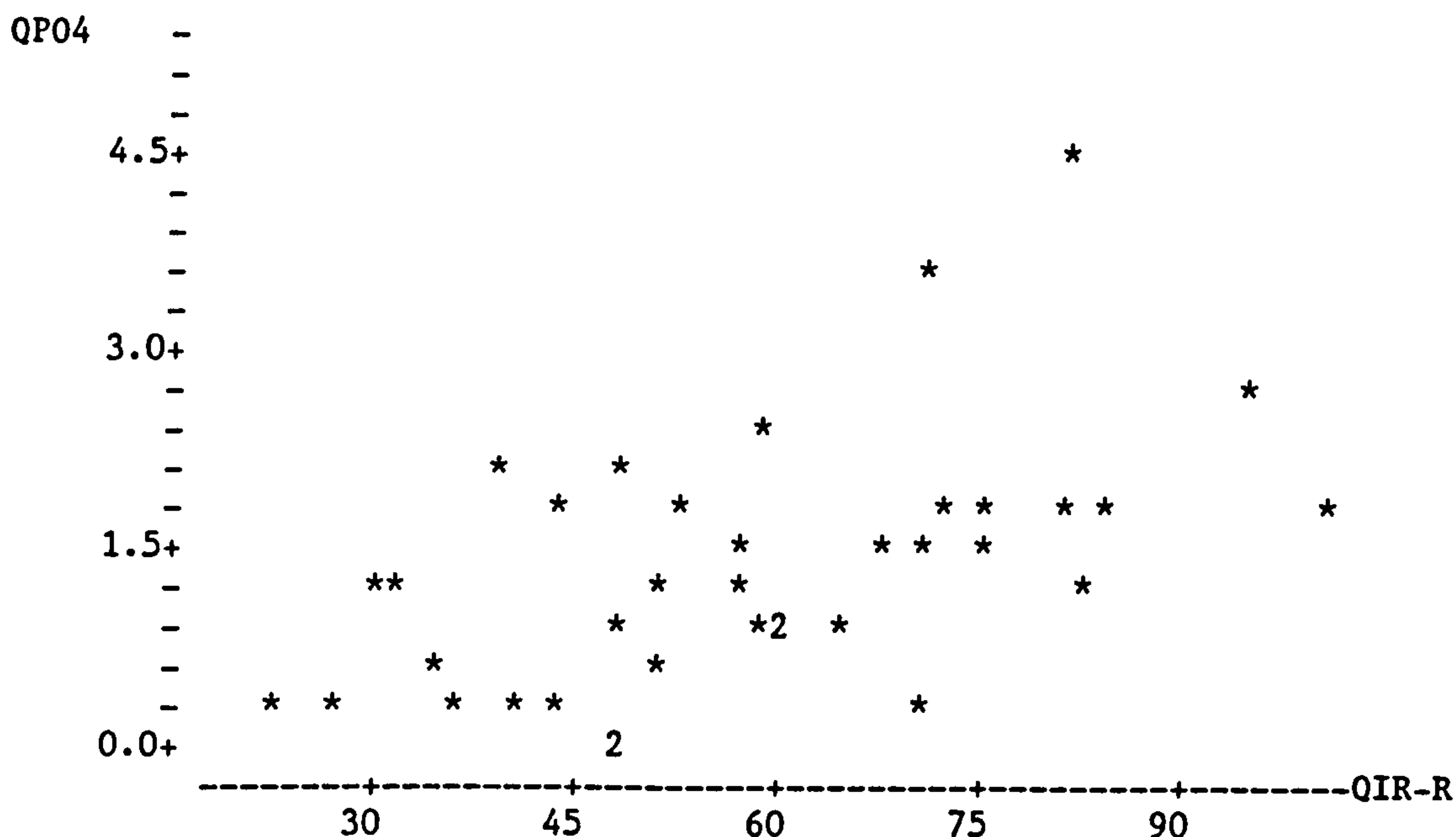
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 5.0897 | 5.0897 |
| Error | 35 | 27.3079 | 0.7802 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | QIR/R | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 7 | 3.82 | 0.160 | 1.957 | 0.279 | -1.797 | -2.14R |
| 12 | 3.17 | 4.380 | 1.500 | 0.157 | 2.880 | 3.31R |
| 34 | 3.63 | 3.700 | 1.828 | 0.238 | 1.872 | 2.20R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C116 and C146 = 0.418



Correlation of QP04 and QIR-R = 0.520

The regression equation is
 QP04 = - 0.141 + 0.0258 QIR-R

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -0.1405 | 0.4343 | -0.32 |
| QIR-R | 0.025778 | 0.007153 | 3.60 |

s = 0.8217 R-sq = 27.1% R-sq(adj) = 25.0%

Analysis of Variance

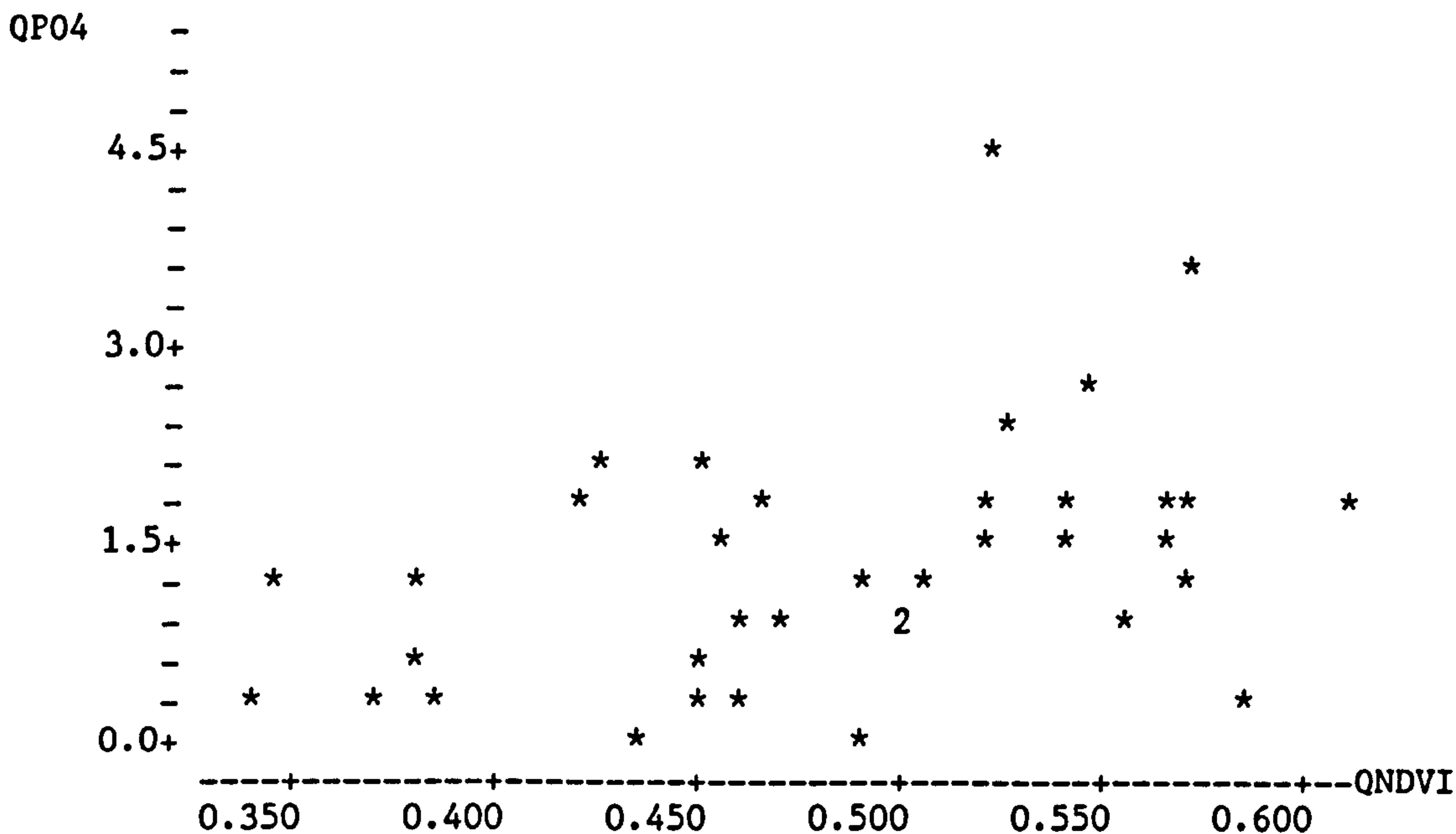
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 8.7679 | 8.7679 |
| Error | 35 | 23.6296 | 0.6751 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | QIR-R | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 12 | 81 | 4.380 | 1.949 | 0.215 | 2.431 | 3.06R |
| 28 | 101 | 1.810 | 2.463 | 0.338 | -0.653 | -0.87 X |
| 34 | 71 | 3.700 | 1.686 | 0.165 | 2.014 | 2.50R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C116 and C147 = 0.525



Correlation of QP04 and QNDVI = 0.405

The regression equation is
 QP04 = - 1.27 + 5.42 QNDVI

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -1.275 | 1.010 | -1.26 |
| QNDVI | 5.417 | 2.066 | 2.62 |

s = 0.8796 R-sq = 16.4% R-sq(adj) = 14.0%

Analysis of Variance

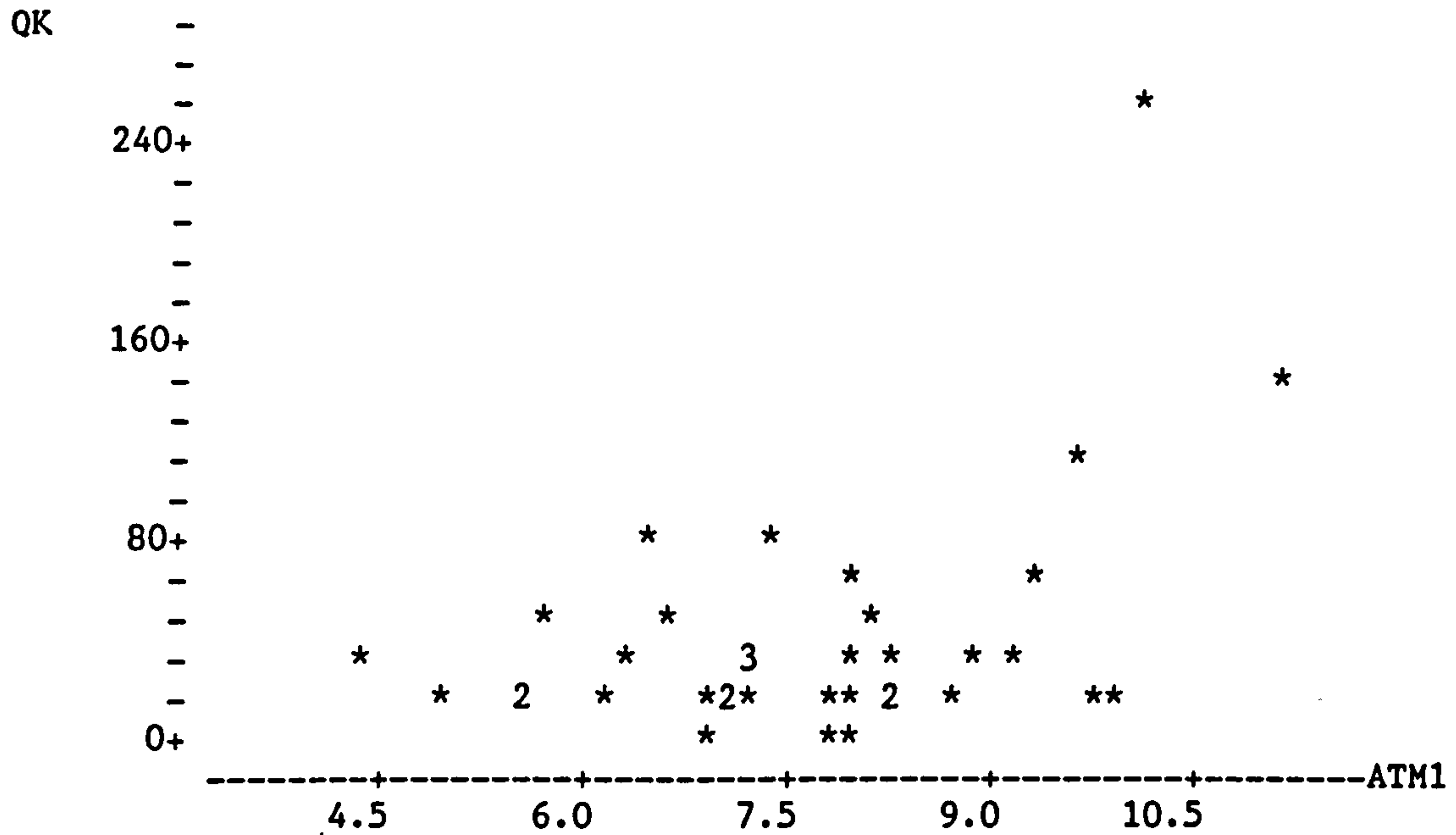
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 5.3186 | 5.3186 |
| Error | 35 | 27.0790 | 0.7737 |
| Total | 36 | 32.3976 | |

Unusual Observations

| Obs. | QNDVI | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 7 | 0.585 | 0.160 | 1.892 | 0.253 | -1.732 | -2.06R |
| 12 | 0.520 | 4.380 | 1.541 | 0.162 | 2.839 | 3.28R |
| 34 | 0.568 | 3.700 | 1.803 | 0.226 | 1.897 | 2.23R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C116 and C148 = 0.418



Correlation of QK and ATM1 = 0.448

The regression equation is
 $QK = -68.7 + 14.3 \text{ ATM1}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -68.73 | 37.52 | -1.83 |
| ATM1 | 14.331 | 4.835 | 2.96 |

s = 43.25 R-sq = 20.1% R-sq(adj) = 17.8%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 16433 | 16433 |
| Error | 35 | 65471 | 1871 |
| Total | 36 | 81904 | |

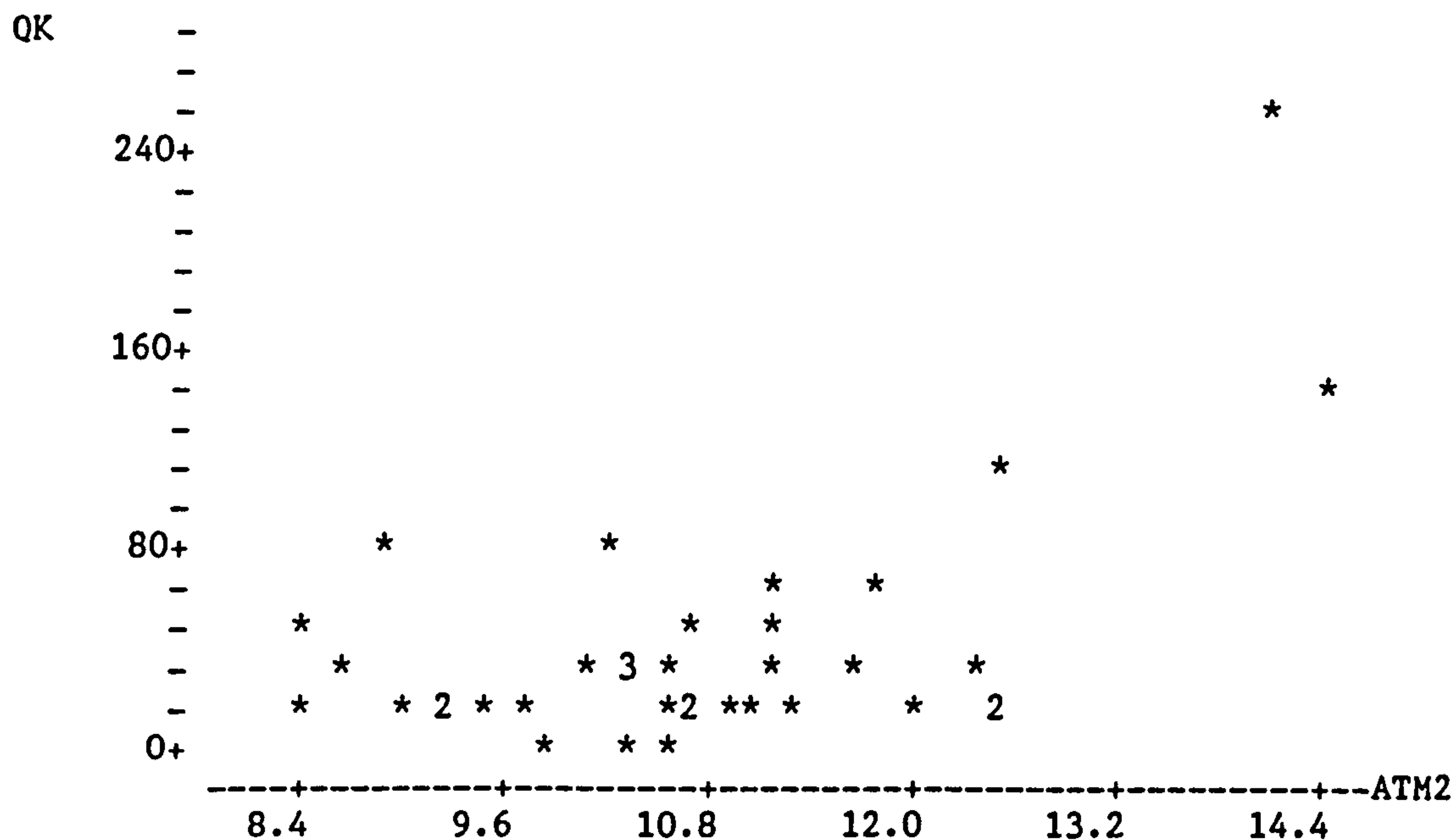
Unusual Observations

| Obs. | ATM1 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|-------|-----------|----------|----------|
| 9 | 11.1 | 141.00 | 90.24 | 18.24 | 50.76 | 1.29 X |
| 12 | 10.1 | 259.00 | 76.36 | 14.04 | 182.64 | 4.46R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C101 = 0.245



Correlation of QK and ATM2 = 0.547

The regression equation is
 $QK = -157 + 18.4 \text{ ATM2}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | -157.03 | 51.51 | -3.05 |
| ATM2 | 18.443 | 4.770 | 3.87 |

s = 40.49 R-sq = 29.9% R-sq(adj) = 27.9%

Analysis of Variance

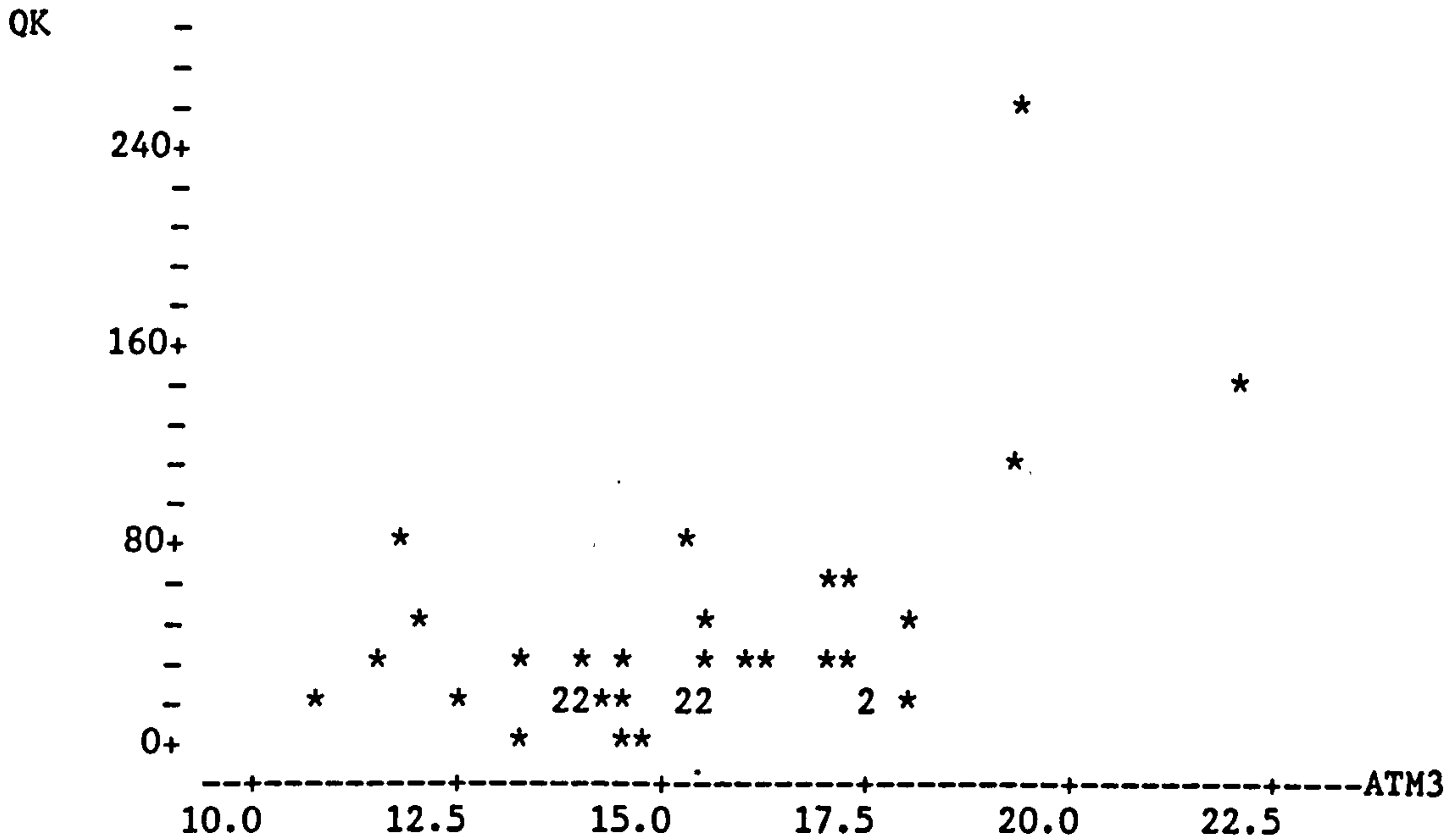
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 24513 | 24513 |
| Error | 35 | 57390 | 1640 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM2 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|--------|-----------|----------|----------|
| 9 | 14.4 | 141.00 | 108.99 | 18.93 | 32.01 | 0.89 X |
| 12 | 14.0 | 259.00 | 101.21 | 17.06 | 157.79 | 4.30RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C102 = 0.306



Correlation of QK and ATM3 = 0.527

The regression equation is
 $QK = -122 + 10.6 \text{ ATM3}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | -122.05 | 44.82 | -2.72 |
| ATM3 | 10.606 | 2.891 | 3.67 |

s = 41.11 R-sq = 27.8% R-sq(adj) = 25.7%

Analysis of Variance

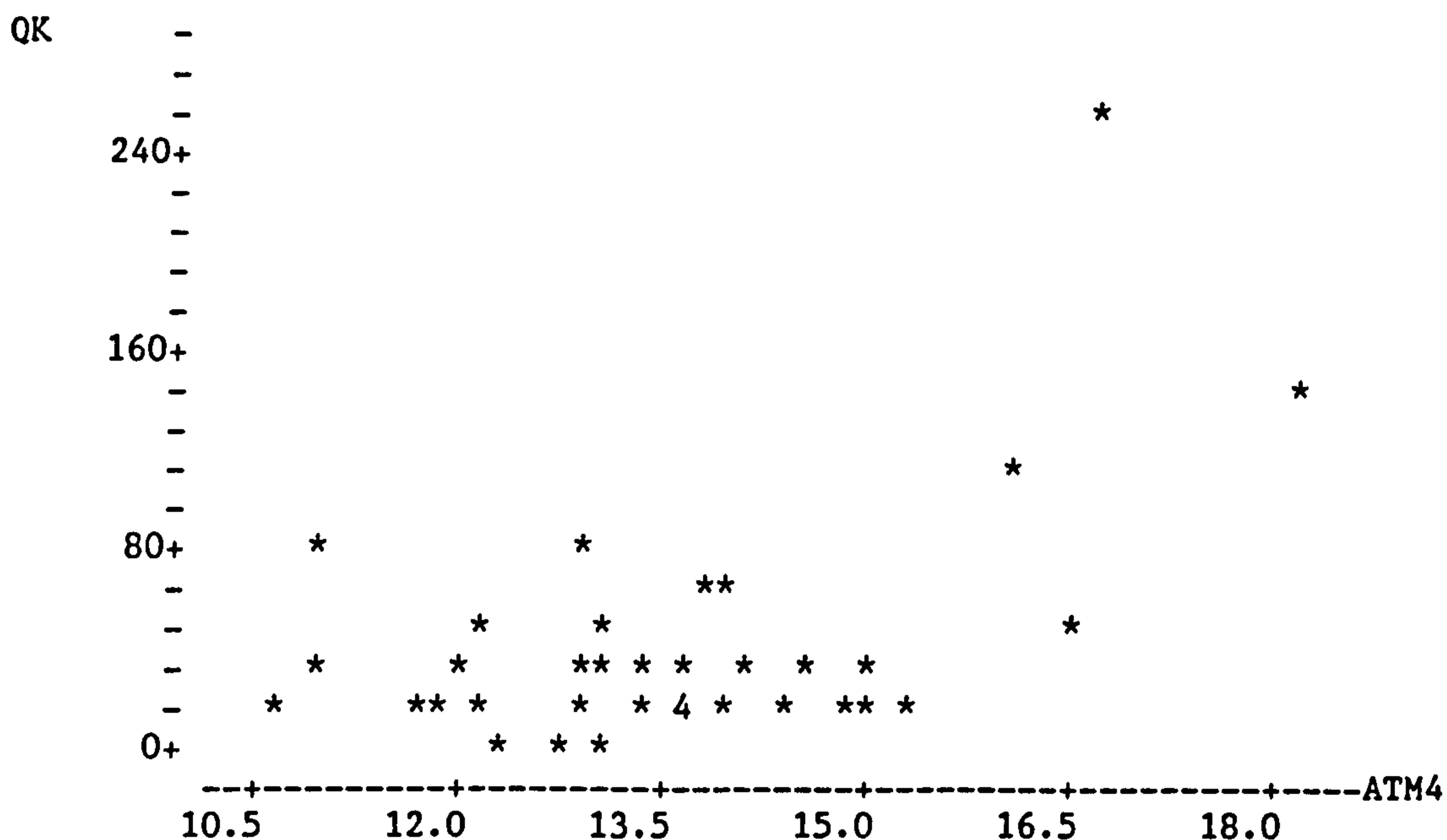
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 22745 | 22745 |
| Error | 35 | 59159 | 1690 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM3 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|--------|-----------|----------|----------|
| 9 | 22.1 | 141.00 | 112.16 | 20.68 | 28.84 | 0.81 X |
| 12 | 19.1 | 259.00 | 81.03 | 12.96 | 177.97 | 4.56R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C103 = 0.421



Correlation of QK and ATM4 = 0.501

The regression equation is
 $QK = -158 + 14.6 \text{ ATM4}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | -158.33 | 58.40 | -2.71 |
| ATM4 | 14.631 | 4.268 | 3.43 |

s = 41.86 R-sq = 25.1% R-sq(adj) = 23.0%

Analysis of Variance

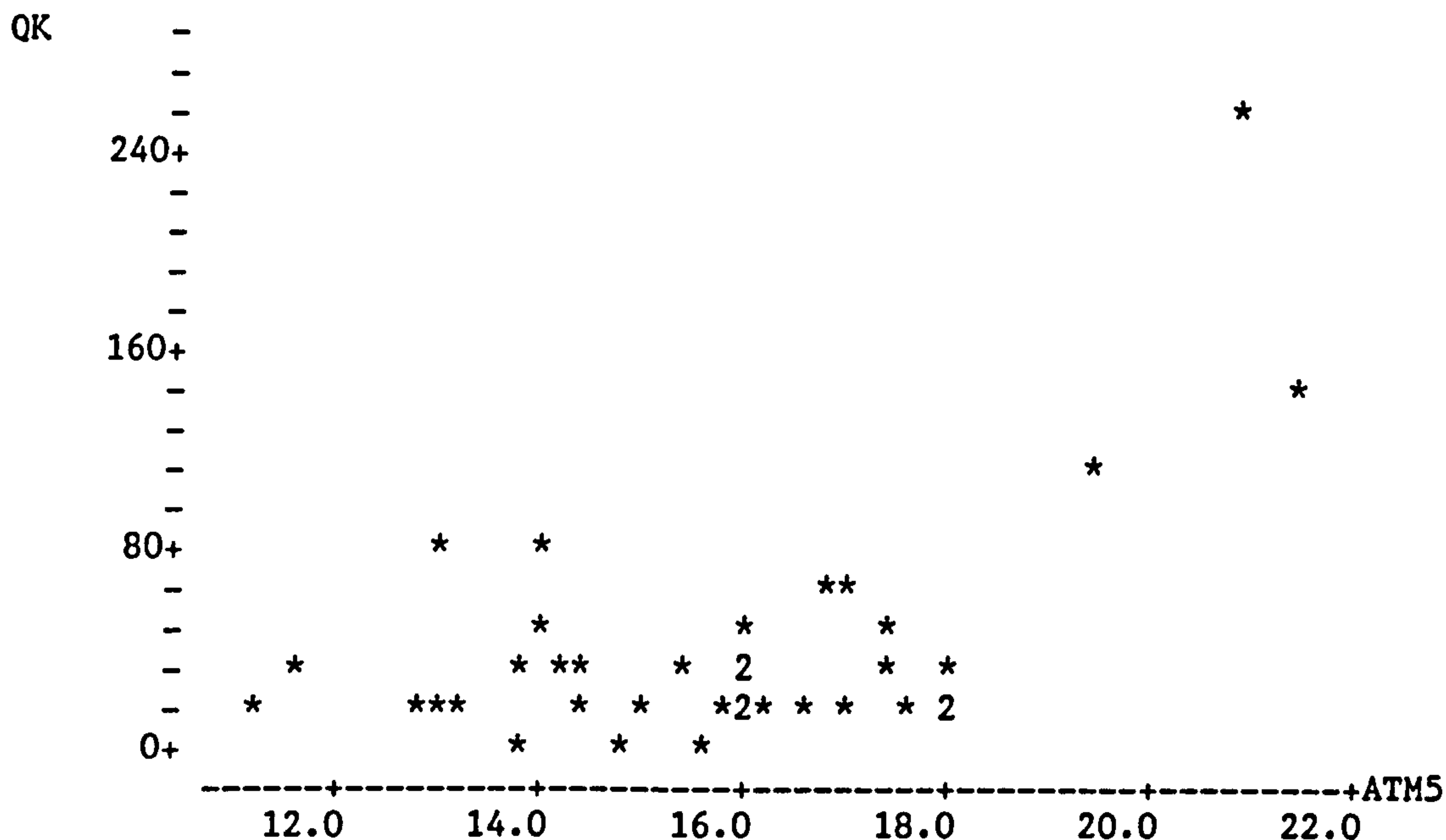
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 20589 | 20589 |
| Error | 35 | 61315 | 1752 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM4 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|--------|-----------|----------|----------|
| 9 | 18.1 | 141.00 | 106.70 | 20.51 | 34.30 | 0.94 X |
| 12 | 16.6 | 259.00 | 85.08 | 14.72 | 173.92 | 4.44R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C104 = 0.298



Correlation of QK and ATM5 = 0.543

The regression equation is

$$QK = -136 + 11.2 \text{ ATM5}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | -136.00 | 46.56 | -2.92 |
| ATM5 | 11.219 | 2.930 | 3.83 |

s = 40.61 R-sq = 29.5% R-sq(adj) = 27.5%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 24184 | 24184 |
| Error | 35 | 57719 | 1649 |
| Total | 36 | 81904 | |

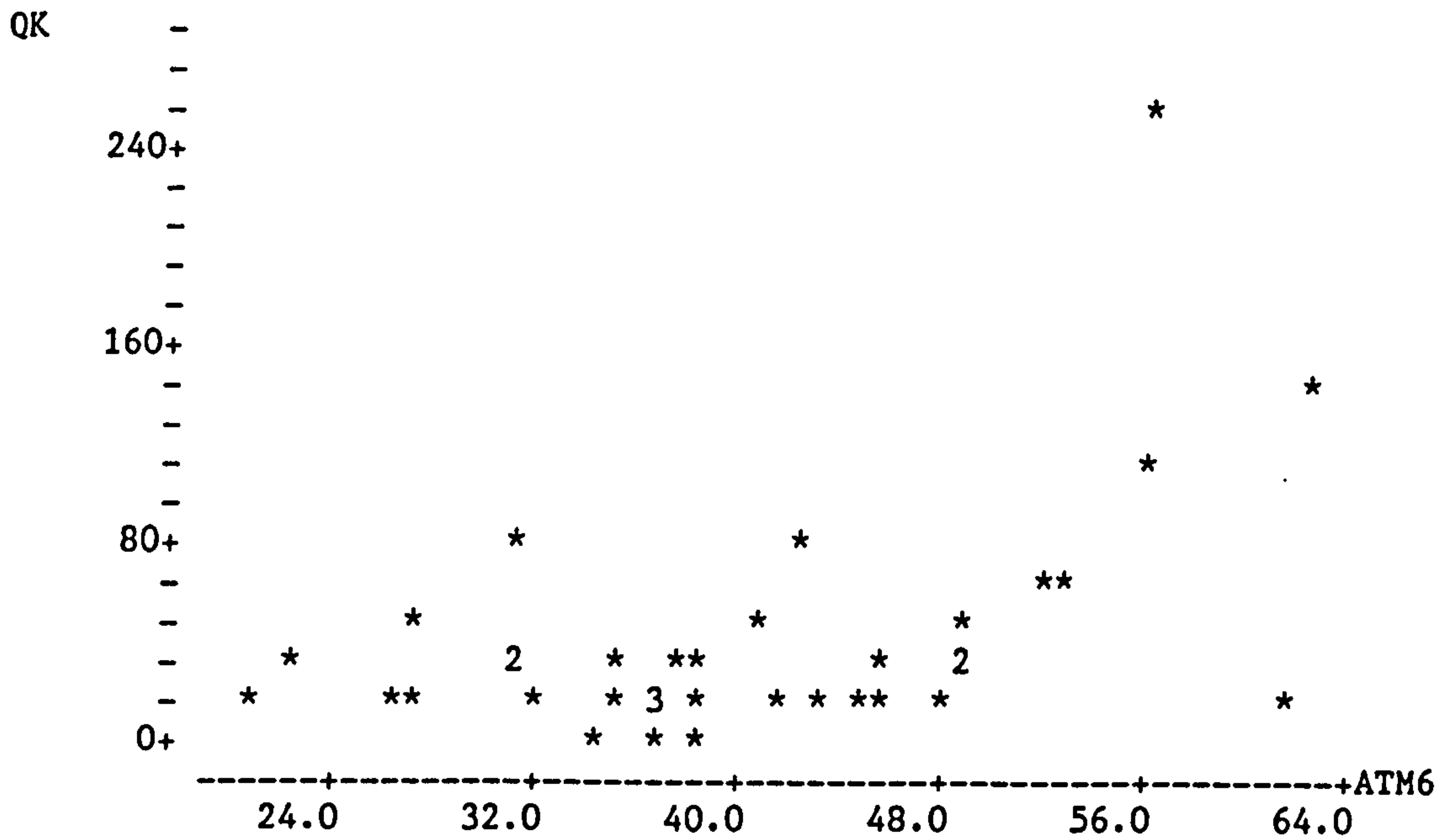
Unusual Observations

| Obs. | ATM5 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|--------|-----------|----------|----------|
| 9 | 21.5 | 141.00 | 105.12 | 18.16 | 35.88 | 0.99 X |
| 12 | 20.8 | 259.00 | 97.42 | 16.30 | 161.58 | 4.34R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C105 = 0.291



Correlation of QK and ATM6 = 0.489

The regression equation is
 $QK = - 51.1 + 2.27 \text{ ATM6}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -51.15 | 28.51 | -1.79 |
| ATM6 | 2.2675 | 0.6845 | 3.31 |

s = 42.21 R-sq = 23.9% R-sq(adj) = 21.7%

Analysis of Variance

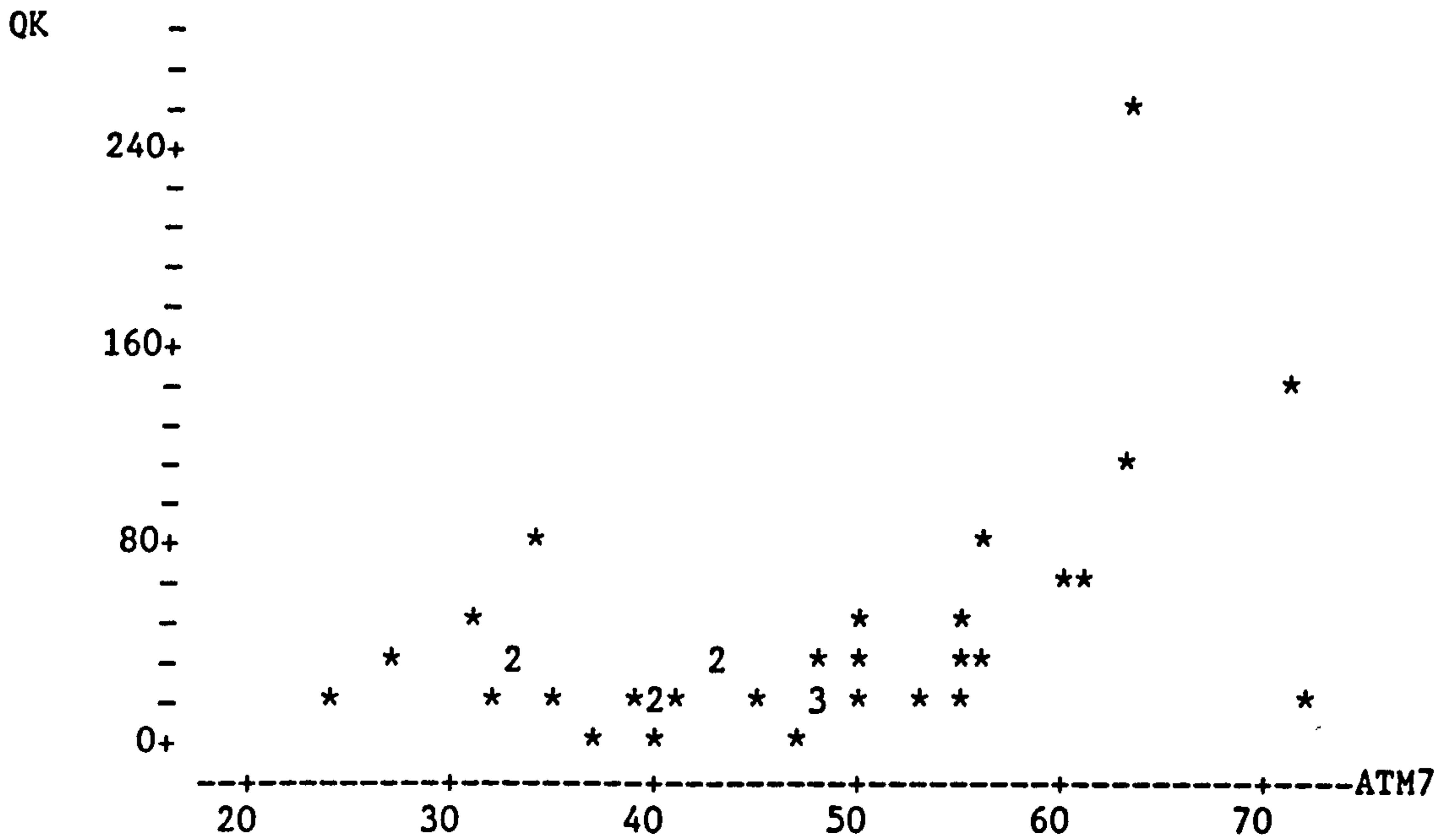
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 19549 | 19549 |
| Error | 35 | 62354 | 1782 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM6 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|-------|-----------|----------|----------|
| 12 | 55.7 | 259.00 | 75.10 | 12.55 | 183.90 | 4.56R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C117 and C106 = 0.406



Correlation of QK and ATM7 = 0.478

The regression equation is
 $QK = -49.7 + 1.93 \text{ ATM7}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -49.72 | 28.89 | -1.72 |
| ATM7 | 1.9347 | 0.6013 | 3.22 |

s = 42.50 R-sq = 22.8% R-sq(adj) = 20.6%

Analysis of Variance

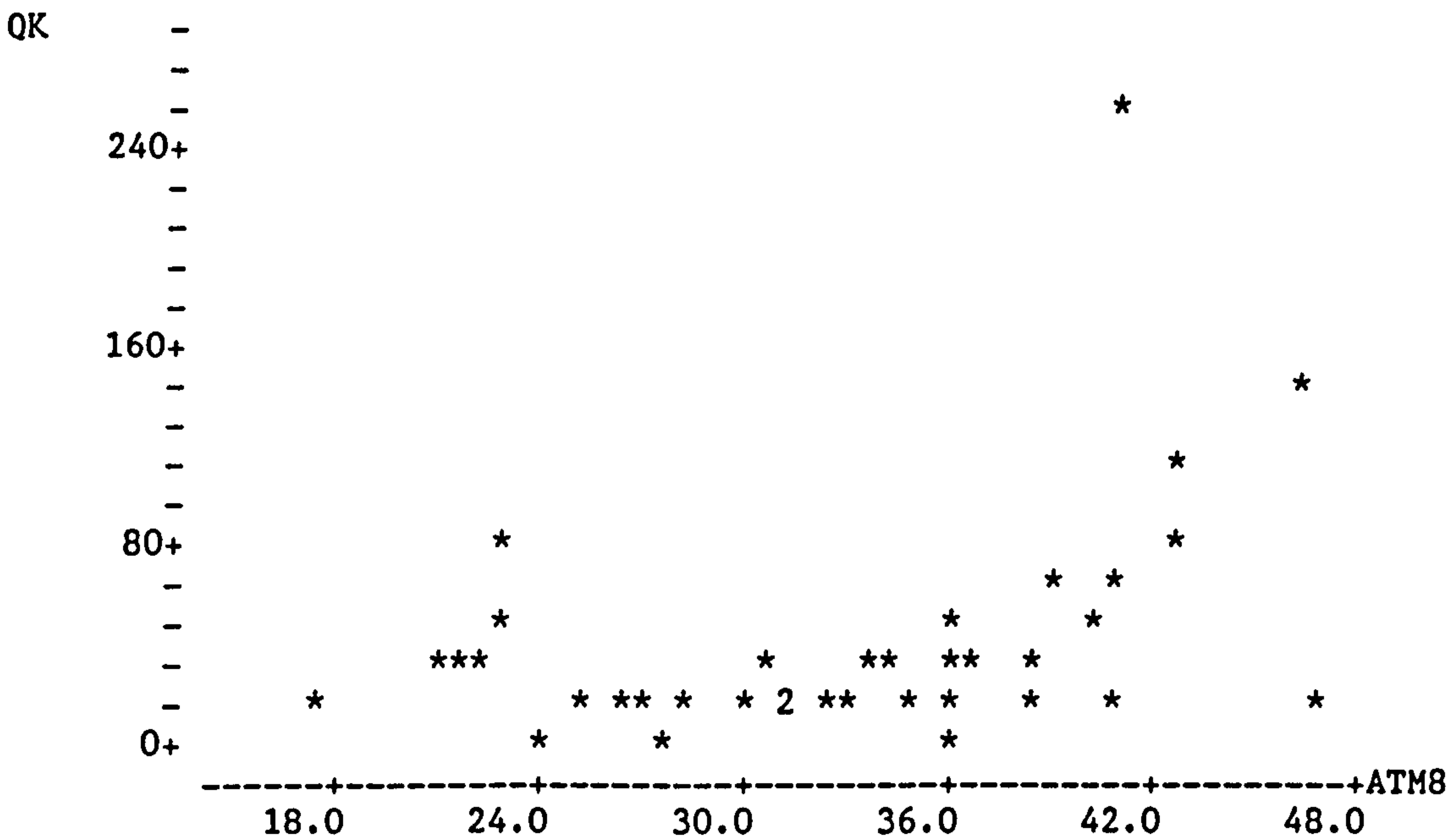
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 18694 | 18694 |
| Error | 35 | 63209 | 1806 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM7 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|-------|-----------|----------|----------|
| 12 | 62.8 | 259.00 | 71.84 | 12.00 | 187.16 | 4.59R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C117 and C107 = 0.437



Correlation of QK and ATM8 = 0.412

The regression equation is
 $QK = -44.3 + 2.58 \text{ ATM8}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -44.29 | 32.47 | -1.36 |
| ATM8 | 2.5844 | 0.9652 | 2.68 |

$s = 44.07$ $R\text{-sq} = 17.0\%$ $R\text{-sq(adj)} = 14.6\%$

Analysis of Variance

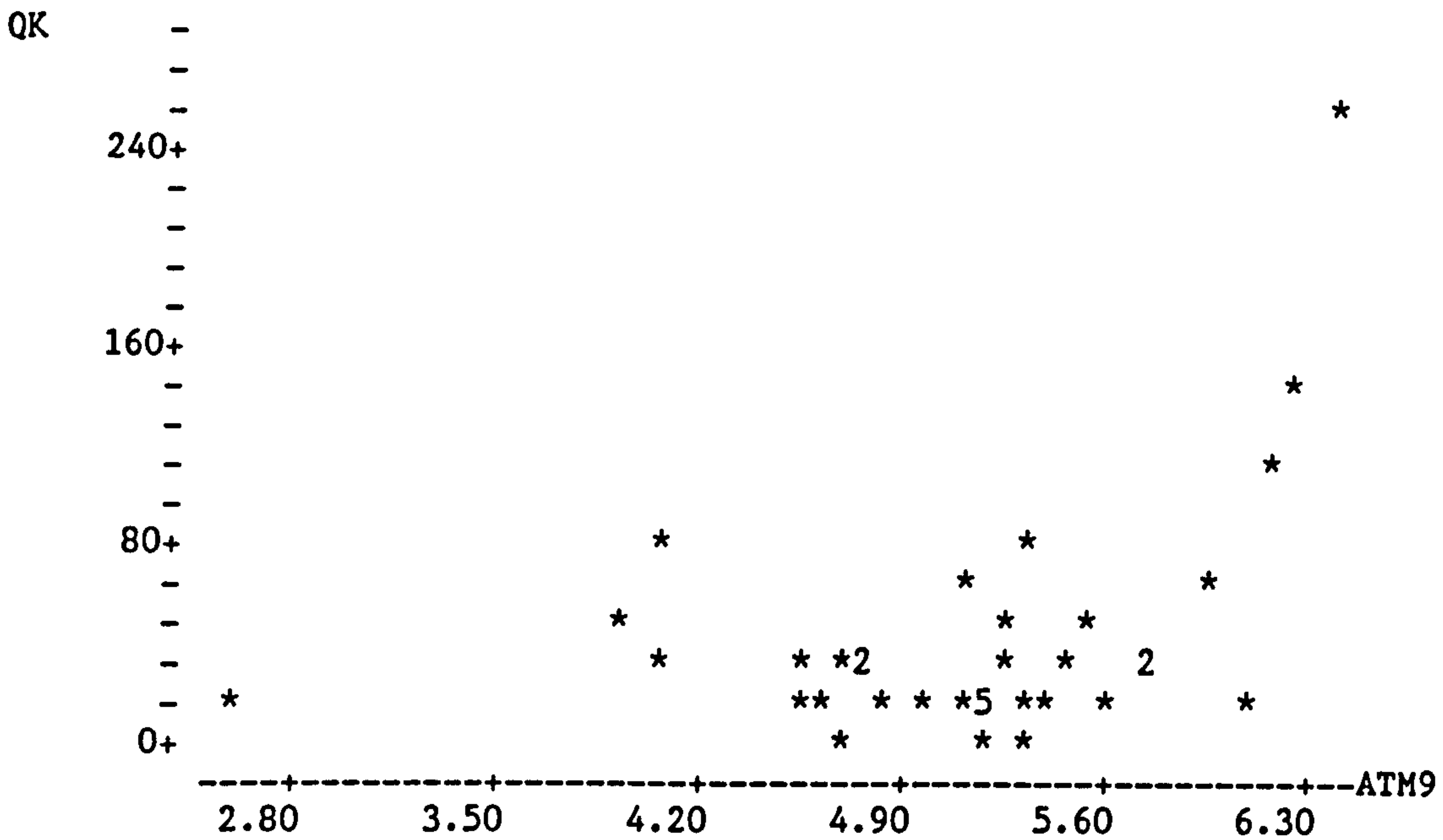
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 13924 | 13924 |
| Error | 35 | 67980 | 1942 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM8 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|-------|-----------|----------|----------|
| 12 | 41.1 | 259.00 | 61.92 | 10.80 | 197.08 | 4.61R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C117 and C108 = 0.401



Correlation of QK and ATM9 = 0.417

The regression equation is
 $QK = -101 + 27.6 \text{ ATM9}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | -100.64 | 52.55 | -1.92 |
| ATM9 | 27.63 | 10.19 | 2.71 |

s = 43.98 R-sq = 17.4% R-sq(adj) = 15.0%

Analysis of Variance

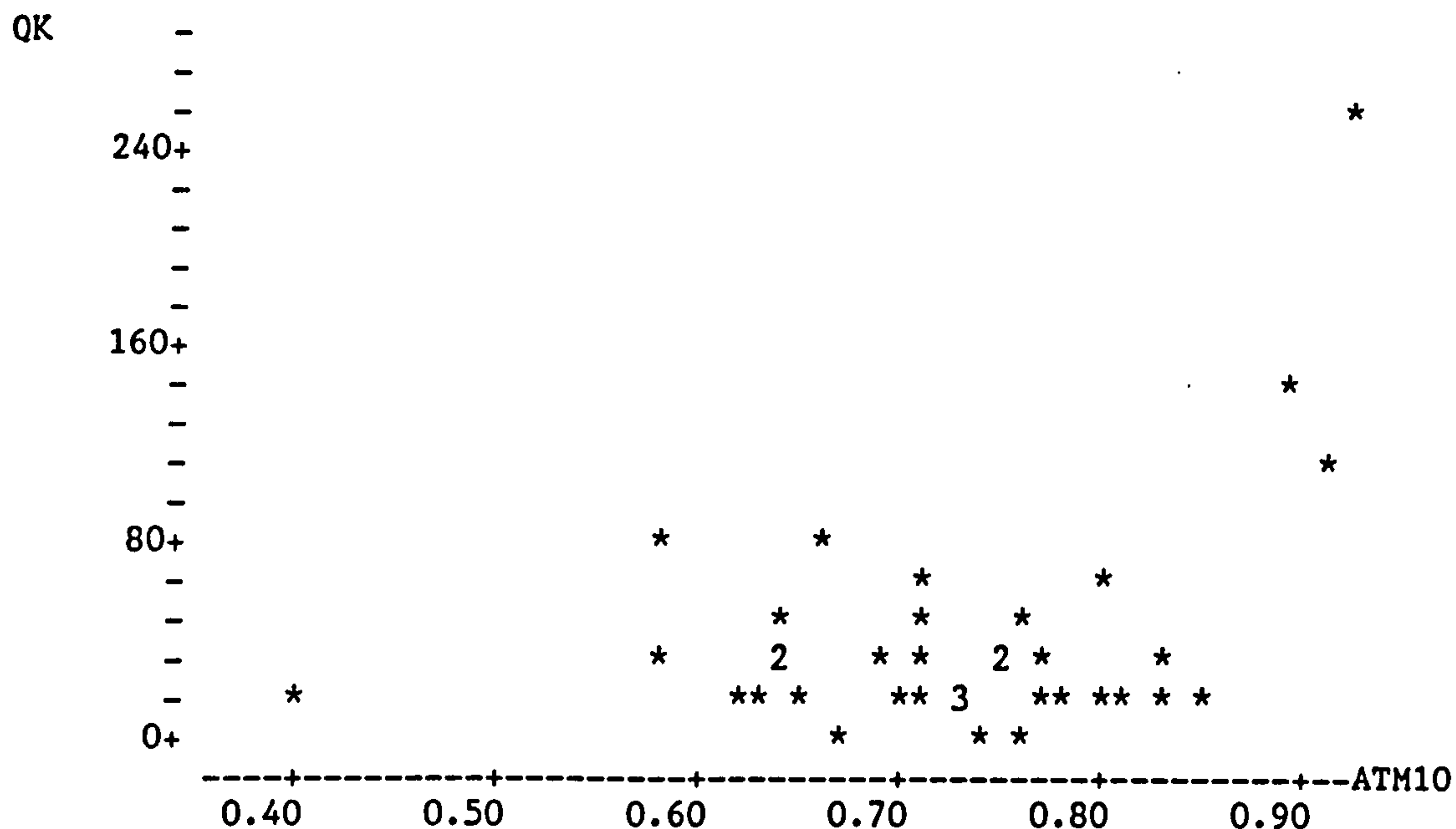
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 14215 | 14215 |
| Error | 35 | 67689 | 1934 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM9 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|--------|-----------|----------|----------|
| 3 | 2.62 | 9.20 | -28.38 | 26.40 | 37.58 | 1.07 X |
| 12 | 6.34 | 259.00 | 74.56 | 14.51 | 184.44 | 4.44R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C109 = 0.275



Correlation of QK and ATM10 = 0.402

The regression equation is
 $QK = -96.0 + 188 \text{ ATM10}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -95.96 | 53.08 | -1.81 |
| ATM10 | 187.97 | 72.45 | 2.59 |

$s = 44.30$ $R\text{-sq} = 16.1\%$ $R\text{-sq(adj)} = 13.7\%$

Analysis of Variance

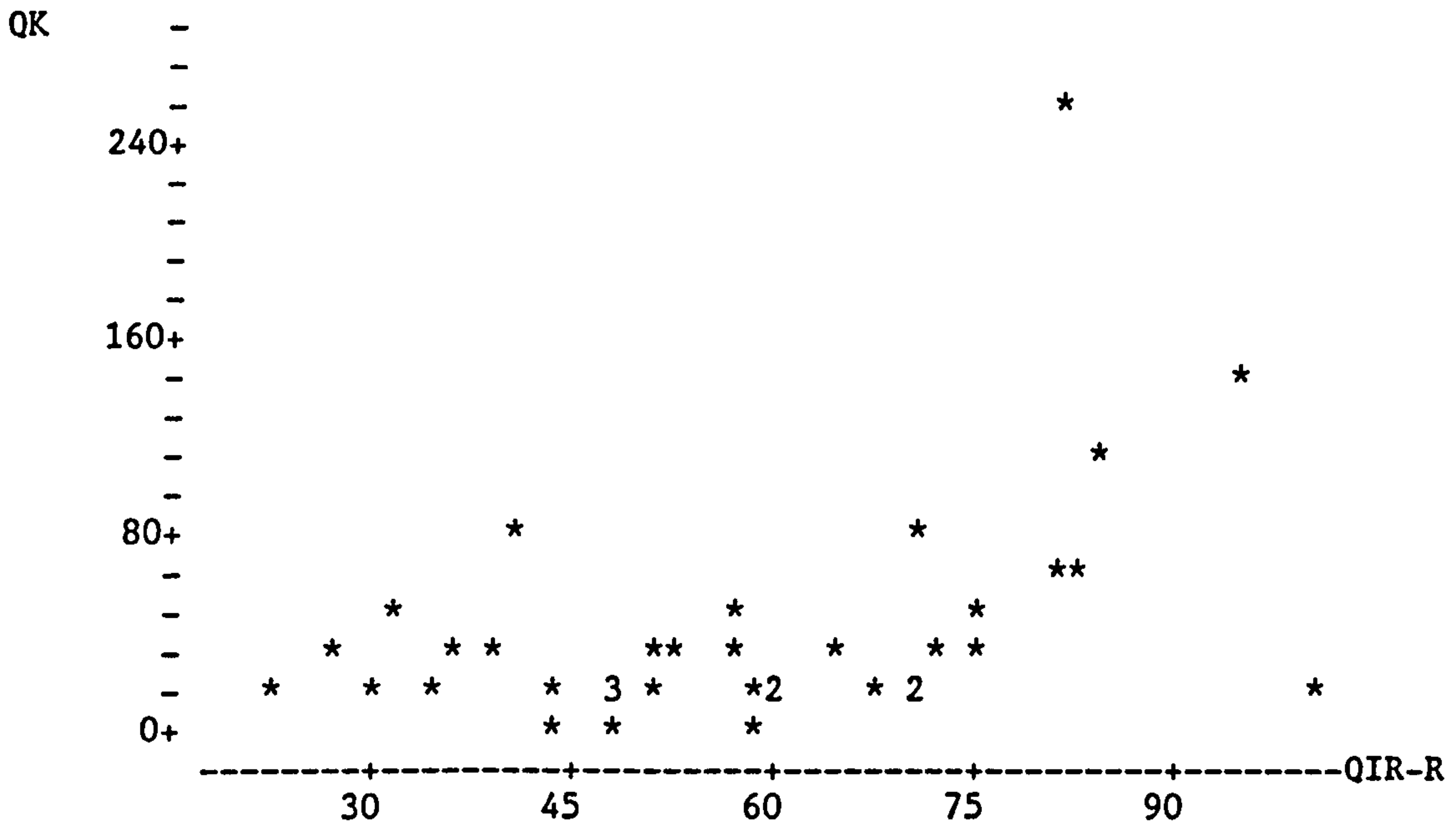
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 13211 | 13211 |
| Error | 35 | 68692 | 1963 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | ATM10 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 3 | 0.397 | 9.20 | -21.34 | 24.91 | 30.54 | 0.83 X |
| 12 | 0.916 | 259.00 | 76.26 | 15.60 | 182.74 | 4.41R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C110 = 0.073



Correlation of QK and QIR-R = 0.448

The regression equation is
 $QK = -23.9 + 1.12 QIR-R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -23.92 | 22.86 | -1.05 |
| QIR-R | 1.1158 | 0.3765 | 2.96 |

s = 43.25 R-sq = 20.1% R-sq(adj) = 17.8%

Analysis of Variance

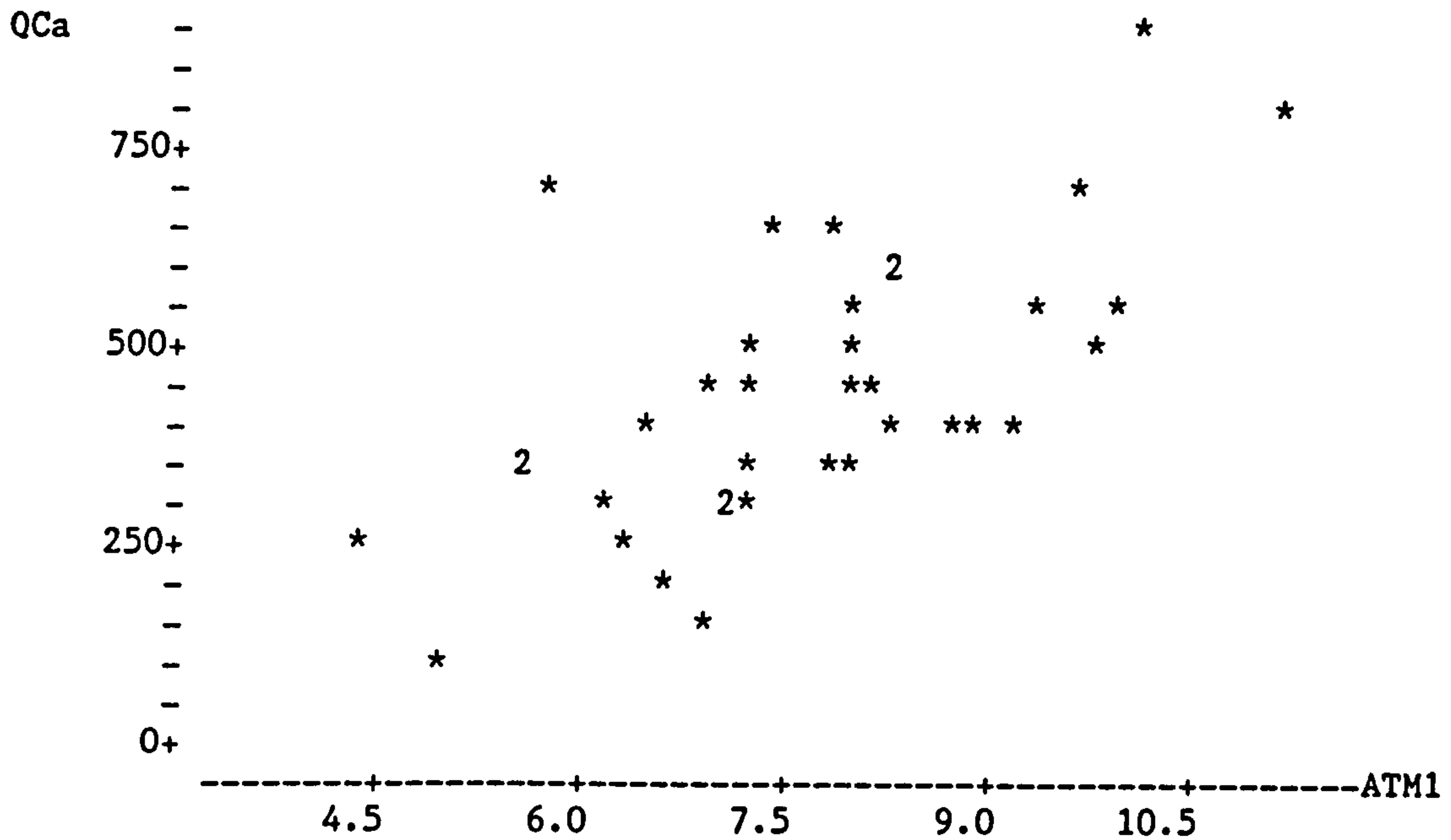
| SOURCE | DF | SS | MS |
|------------|----|-------|-------|
| Regression | 1 | 16426 | 16426 |
| Error | 35 | 65478 | 1871 |
| Total | 36 | 81904 | |

Unusual Observations

| Obs. | QIR-R | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 12 | 81 | 259.00 | 66.54 | 11.31 | 192.46 | 4.61R |
| 28 | 101 | 16.20 | 88.76 | 17.78 | -72.56 | -1.84 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C117 and C147 = 0.412



Correlation of QCa and ATM1 = 0.629

The regression equation is
 $QCa = -139 + 76.2 \text{ ATM1}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -138.7 | 123.6 | -1.12 |
| ATM1 | 76.20 | 15.93 | 4.78 |

$s = 142.5$ $R\text{-sq} = 39.5\%$ $R\text{-sq}(\text{adj}) = 37.8\%$

Analysis of Variance

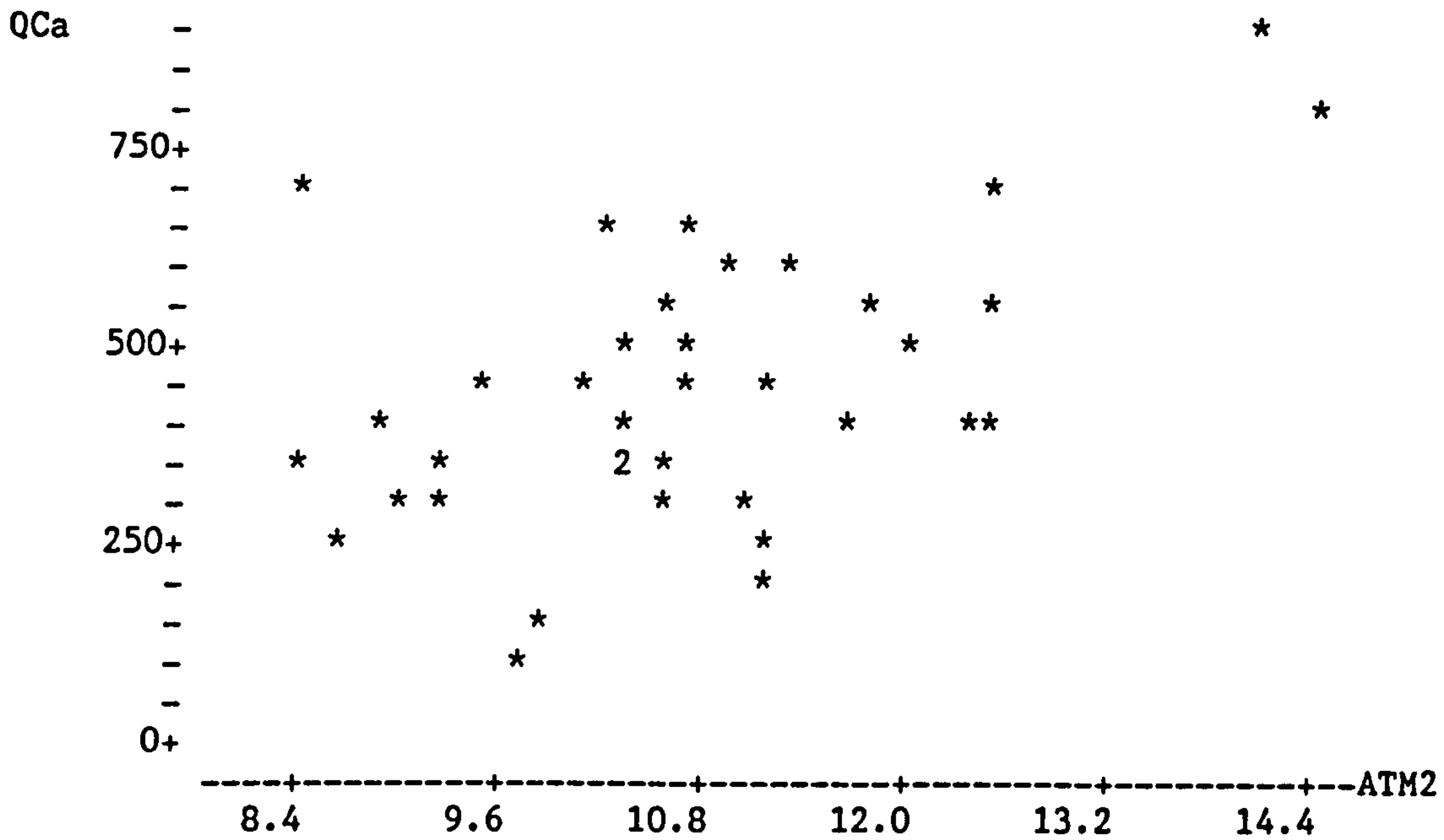
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 464562 | 464562 |
| Error | 35 | 710696 | 20306 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM1 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 8 | 5.7 | 714.0 | 295.5 | 38.5 | 418.5 | 3.05R |
| 9 | 11.1 | 806.0 | 706.6 | 60.1 | 99.4 | 0.77 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C101 = 0.634



Correlation of QCa and ATM2 = 0.508

The regression equation is
 $QCa = -253 + 64.9 \text{ ATM2}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -252.6 | 200.8 | -1.26 |
| ATM2 | 64.85 | 18.59 | 3.49 |

$s = 157.9$ $R\text{-sq} = 25.8\%$ $R\text{-sq}(\text{adj}) = 23.7\%$

Analysis of Variance

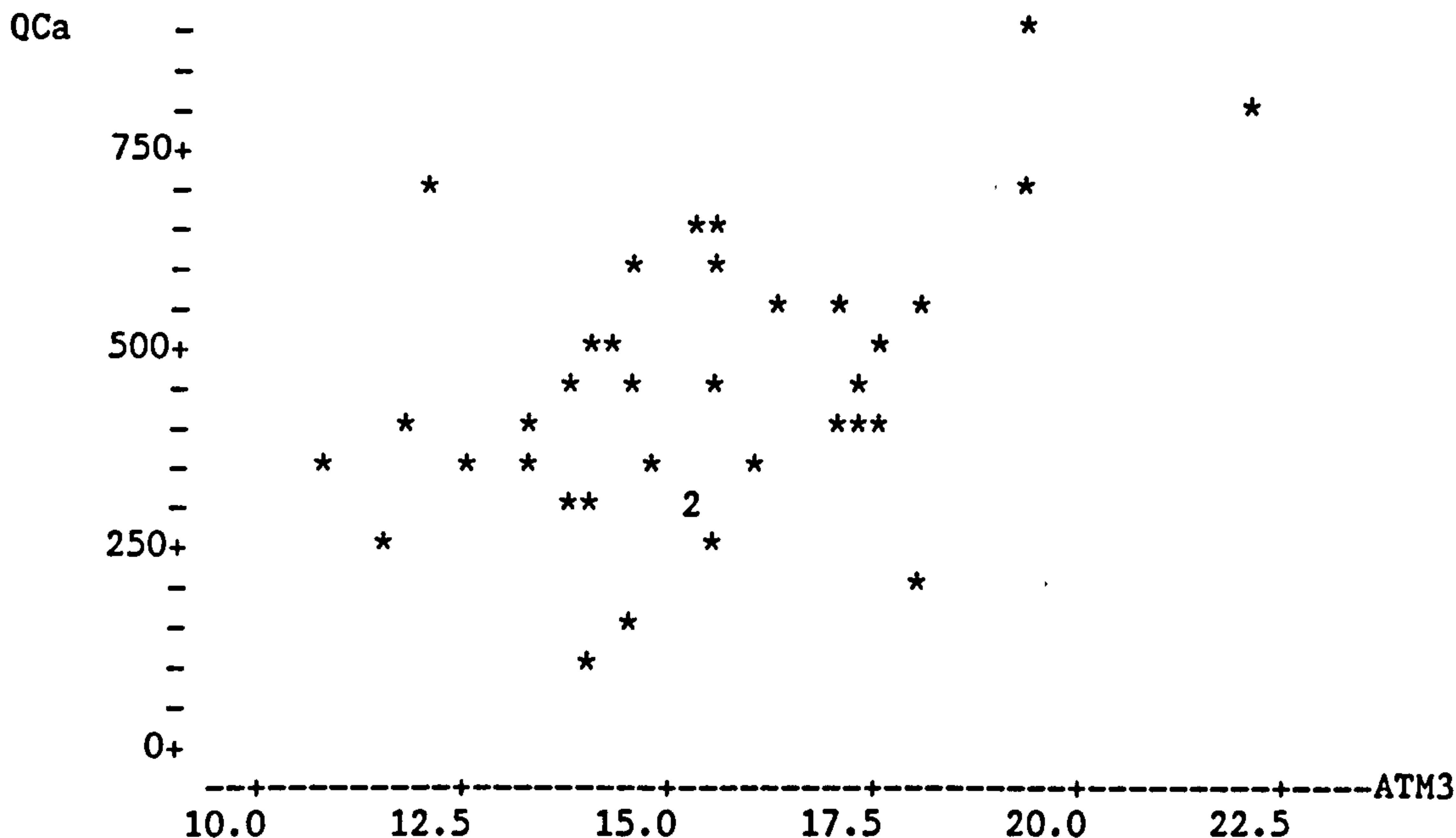
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 303141 | 303141 |
| Error | 35 | 872117 | 24918 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM2 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 8 | 8.4 | 714.0 | 294.6 | 49.6 | 419.4 | 2.80R |
| 9 | 14.4 | 806.0 | 682.9 | 73.8 | 123.1 | 0.88 X |
| 12 | 14.0 | 891.0 | 655.6 | 66.5 | 235.4 | 1.64 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C102 = 0.427



Correlation of QCa and ATM3 = 0.444

The regression equation is
 $QCa = -77 + 33.9 \text{ ATM3}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | -77.3 | 178.9 | -0.43 |
| ATM3 | 33.89 | 11.54 | 2.94 |

s = 164.1 R-sq = 19.8% R-sq(adj) = 17.5%

Analysis of Variance

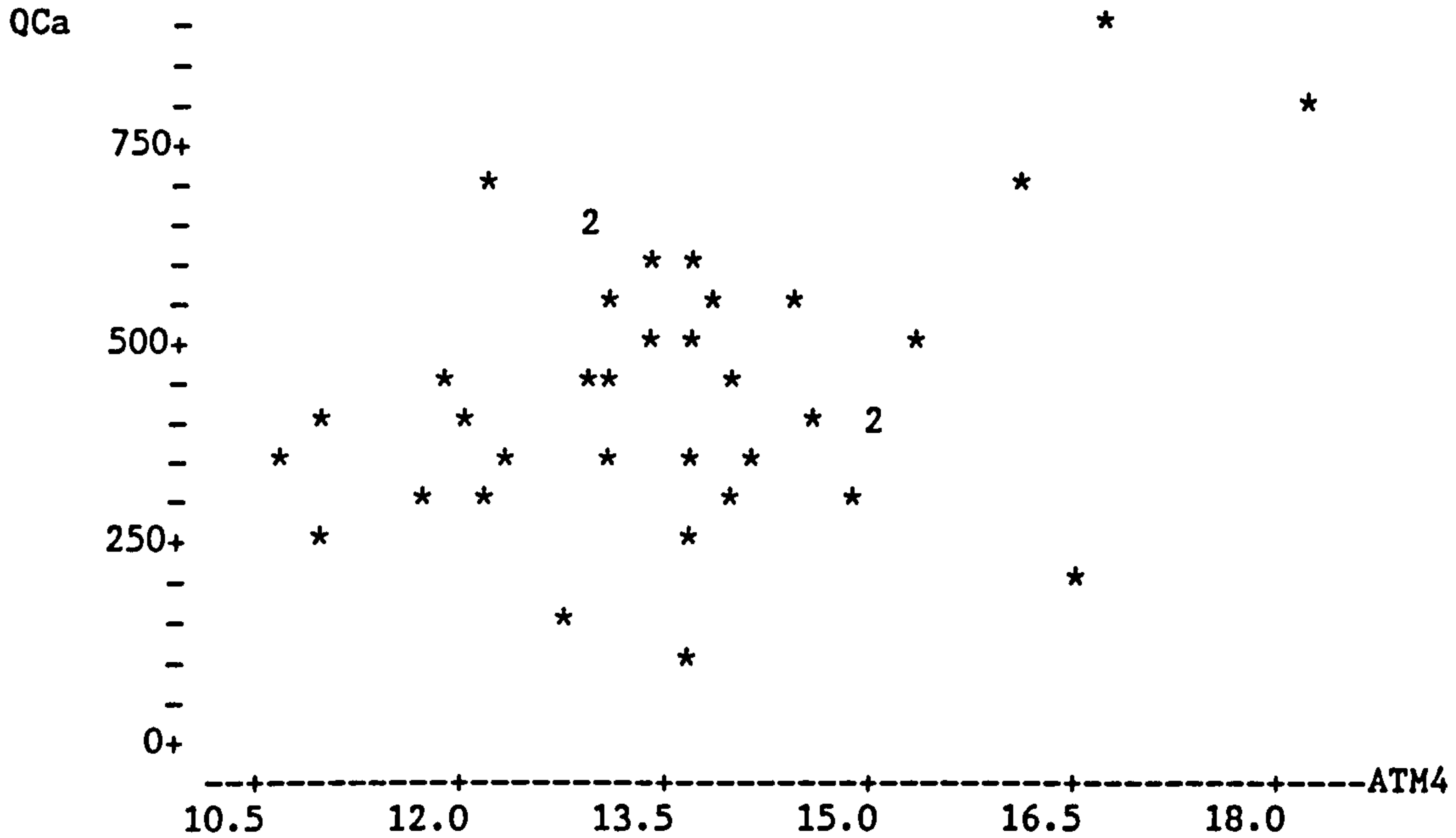
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 232188 | 232188 |
| Error | 35 | 943070 | 26945 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM3 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 8 | 11.9 | 714.0 | 326.5 | 47.7 | 387.5 | 2.47R |
| 9 | 22.1 | 806.0 | 671.0 | 82.6 | 135.0 | 0.95 X |
| 12 | 19.1 | 891.0 | 571.6 | 51.7 | 319.4 | 2.05R |
| 35 | 17.9 | 189.0 | 528.9 | 40.1 | -339.9 | -2.14R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C103 = 0.382



Correlation of QCa and ATM4 = 0.341

The regression equation is
 $QCa = -70 + 37.7 \text{ ATM4}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | -69.9 | 240.4 | -0.29 |
| ATM4 | 37.67 | 17.57 | 2.14 |

$s = 172.3$ $R\text{-sq} = 11.6\%$ $R\text{-sq(adj)} = 9.1\%$

Analysis of Variance

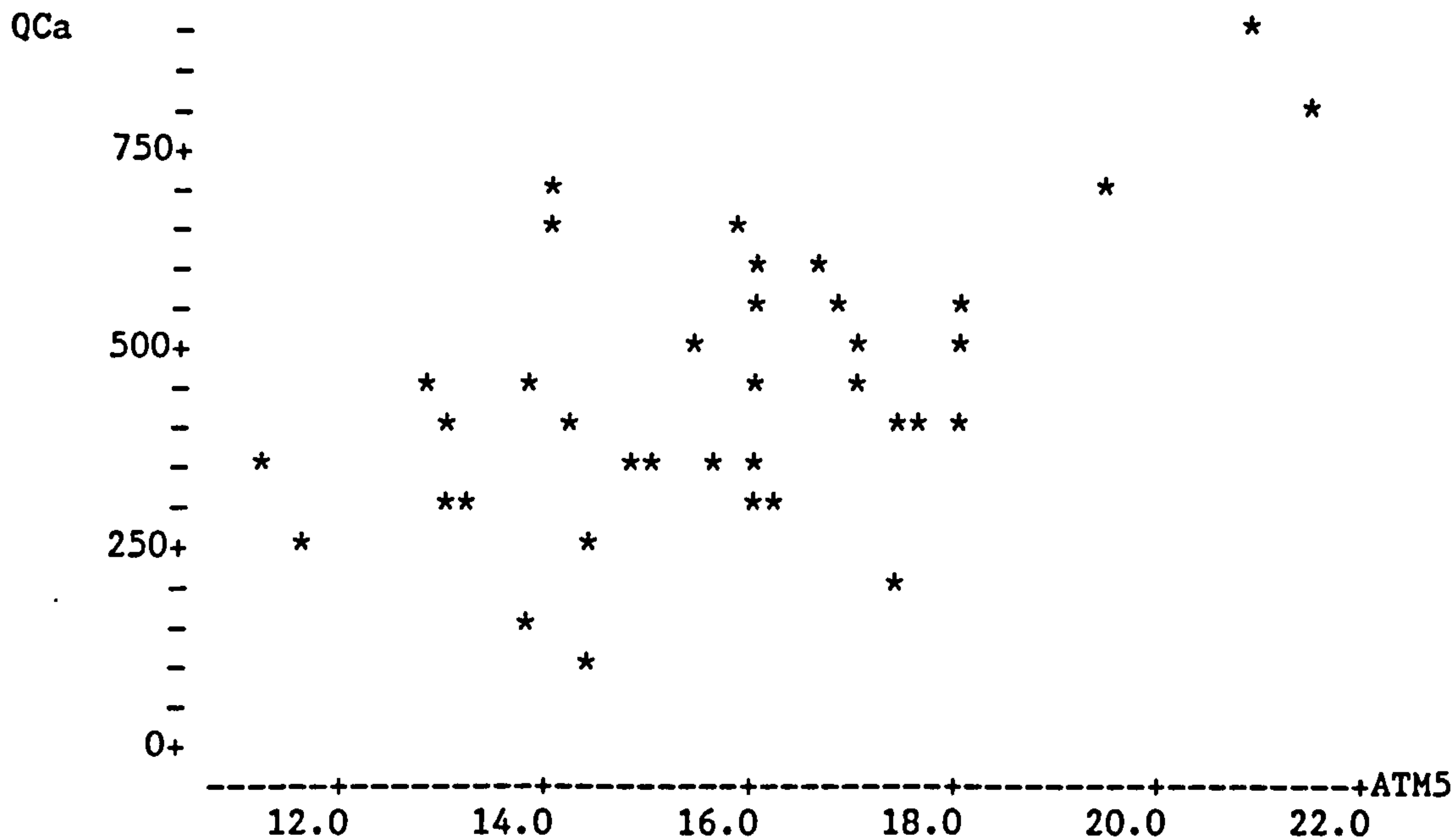
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 136496 | 136496 |
| Error | 35 | 1038761 | 29679 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM4 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 9 | 18.1 | 806.0 | 612.5 | 84.4 | 193.5 | 1.29 X |
| 12 | 16.6 | 891.0 | 556.8 | 60.6 | 334.2 | 2.07R |
| 35 | 16.5 | 189.0 | 553.1 | 59.1 | -364.1 | -2.25R |
| 36 | 13.7 | 78.0 | 445.5 | 28.4 | -367.5 | -2.16R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C104 = 0.225



Correlation of QCa and ATM5 = 0.537

The regression equation is
 $QCa = -218 + 42.0 \text{ ATM5}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -218.1 | 177.3 | -1.23 |
| ATM5 | 41.96 | 11.16 | 3.76 |

s = 154.6 R-sq = 28.8% R-sq(adj) = 26.8%

Analysis of Variance

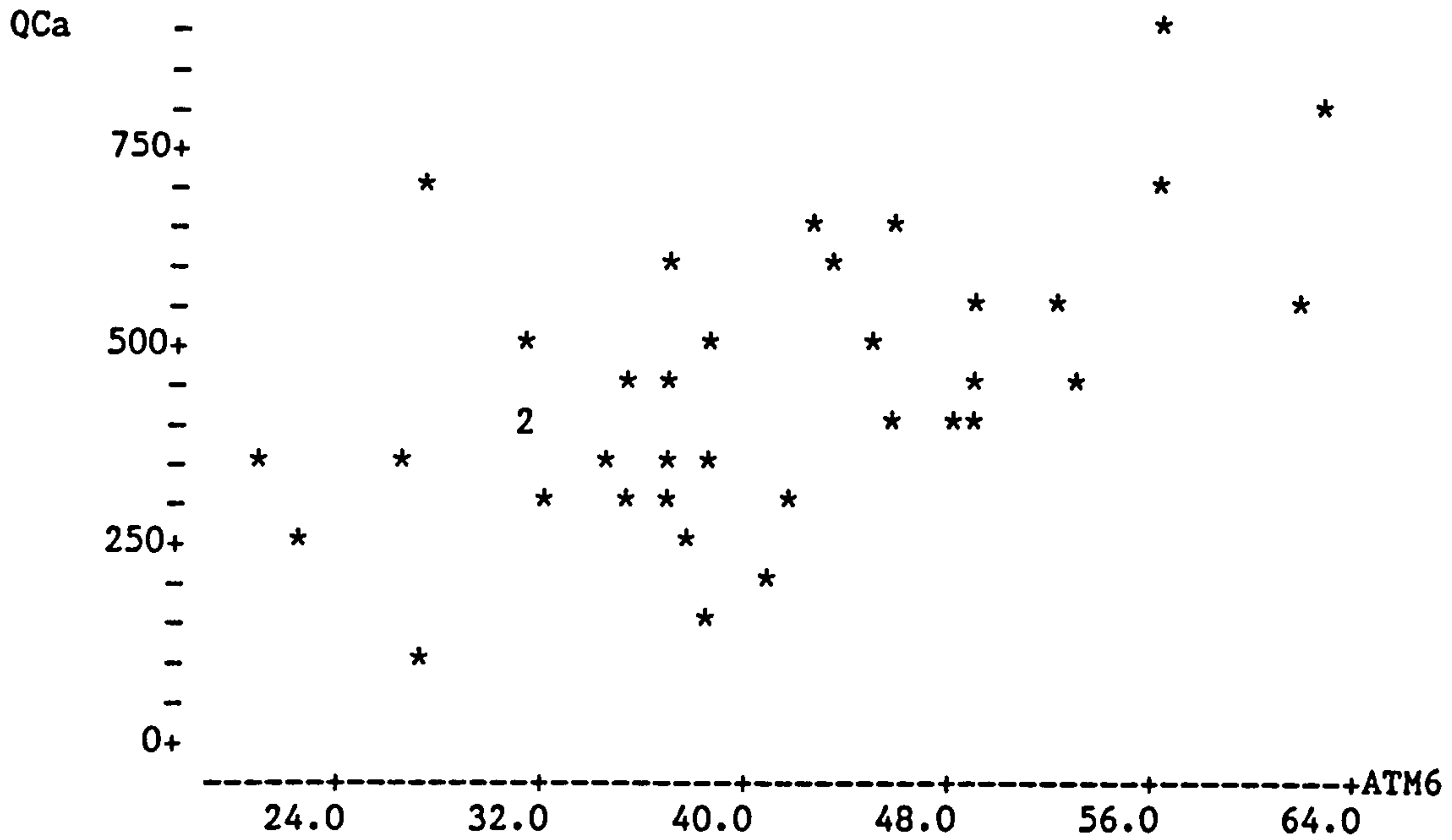
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 338347 | 338347 |
| Error | 35 | 836911 | 23912 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM5 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 8 | 13.9 | 714.0 | 367.0 | 32.3 | 347.0 | 2.29R |
| 9 | 21.5 | 806.0 | 683.8 | 69.1 | 122.2 | 0.88 X |
| 35 | 17.5 | 189.0 | 515.1 | 32.0 | -326.1 | -2.16R |
| 36 | 14.4 | 78.0 | 387.6 | 29.2 | -309.6 | -2.04R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C105 = 0.429



Correlation of QCa and ATM6 = 0.548

The regression equation is
 QCa = 53 + 9.64 ATM6

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | 52.5 | 103.5 | 0.51 |
| ATM6 | 9.638 | 2.485 | 3.88 |

s = 153.3 R-sq = 30.1% R-sq(adj) = 28.1%

Analysis of Variance

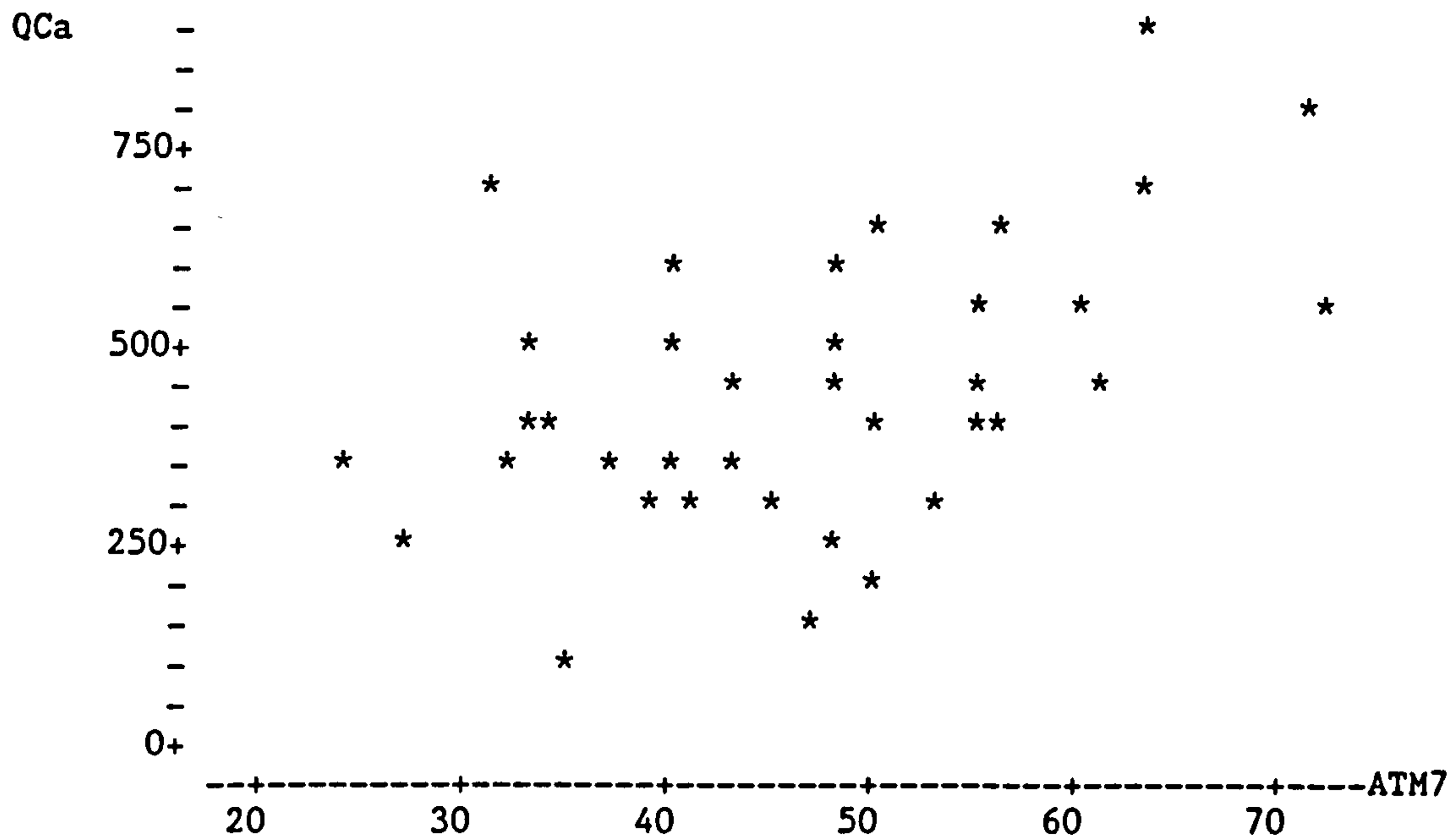
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 353183 | 353183 |
| Error | 35 | 822075 | 23488 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM6 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 8 | 27.2 | 714.0 | 314.7 | 41.4 | 399.3 | 2.71R |
| 12 | 55.7 | 891.0 | 589.2 | 45.6 | 301.8 | 2.06R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C118 and C106 = 0.516



Correlation of QCa and ATM7 = 0.464

The regression equation is
 $QCa = 110 + 7.11 \text{ ATM7}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | 110.3 | 110.4 | 1.00 |
| ATM7 | 7.114 | 2.297 | 3.10 |

s = 162.3 R-sq = 21.5% R-sq(adj) = 19.3%

Analysis of Variance

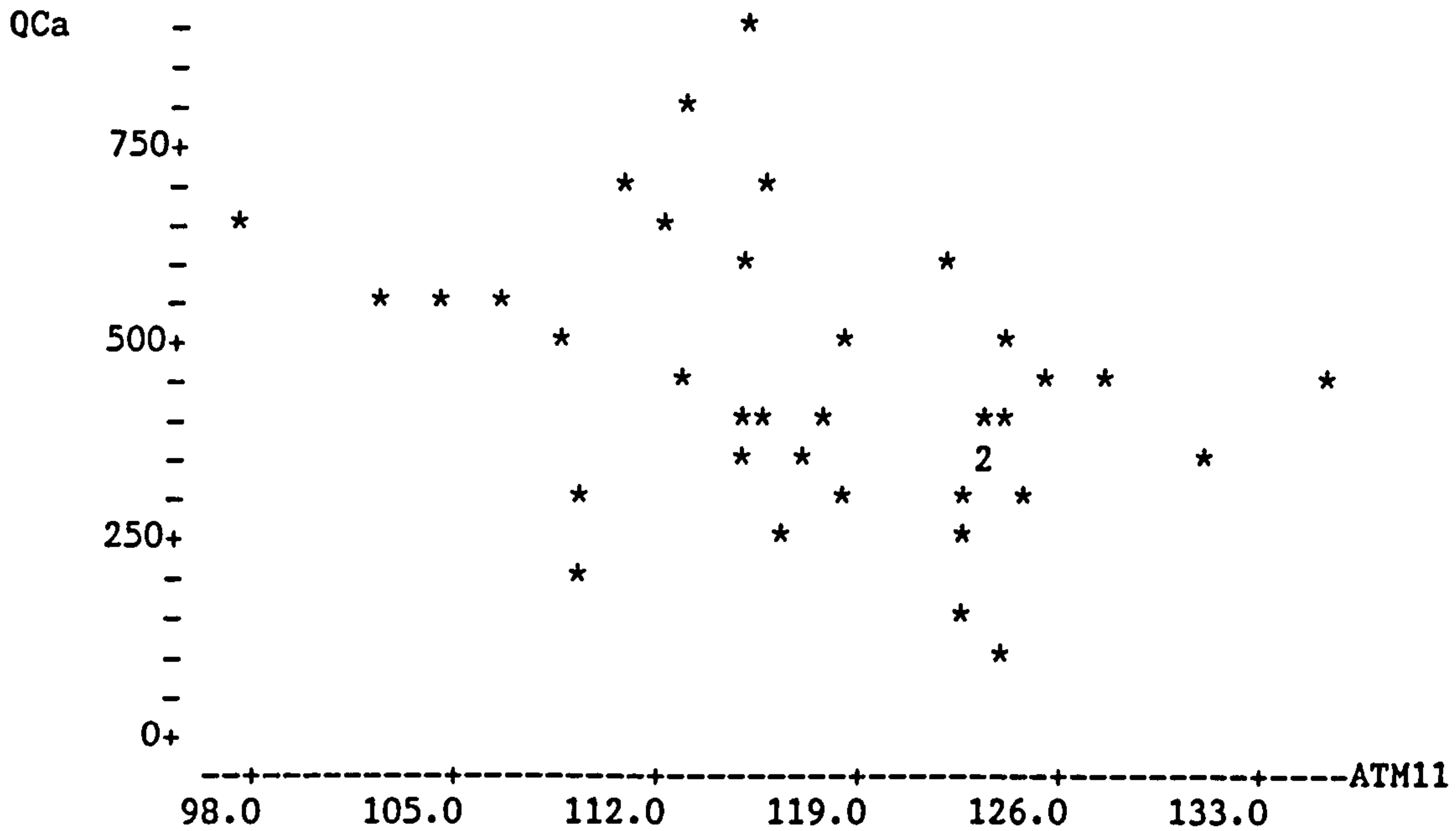
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 252793 | 252793 |
| Error | 35 | 922465 | 26356 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM7 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 8 | 31.0 | 714.0 | 331.2 | 44.6 | 382.8 | 2.45R |
| 12 | 62.8 | 891.0 | 557.3 | 45.8 | 333.7 | 2.14R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C118 and C107 = 0.416



Correlation of QCa and ATM11 = -0.372

The regression equation is
 QCa = 1410 - 8.26 ATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 1410.3 | 409.7 | 3.44 |
| ATM11 | -8.264 | 3.488 | -2.37 |

s = 170.1 R-sq = 13.8% R-sq(adj) = 11.4%

Analysis of Variance

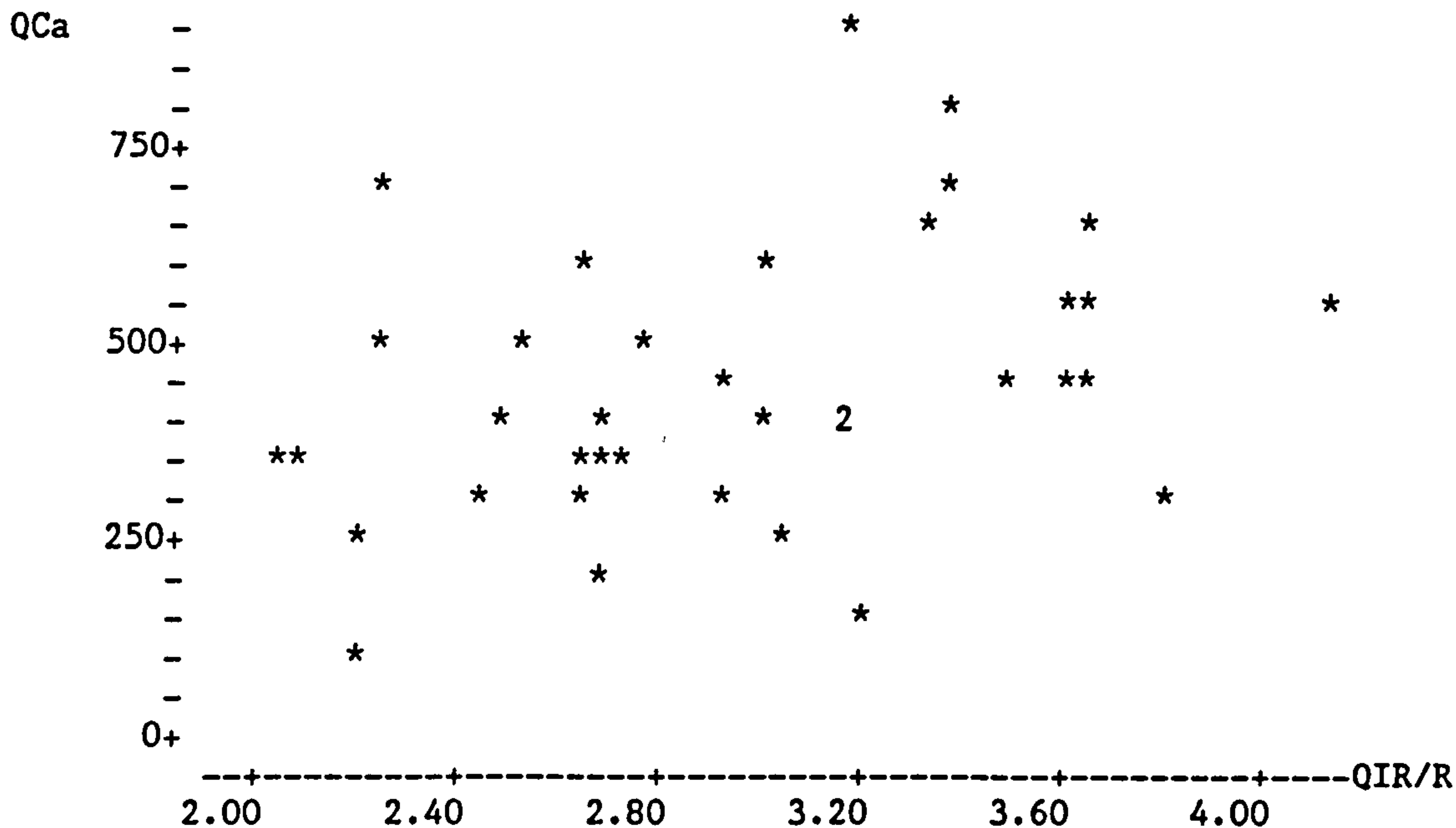
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 162413 | 162413 |
| Error | 35 | 1012845 | 28938 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | ATM11 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 12 | 115 | 891.0 | 462.0 | 29.2 | 429.0 | 2.56R |
| 18 | 135 | 458.0 | 292.6 | 69.0 | 165.4 | 1.06 X |
| 34 | 97 | 655.0 | 608.7 | 75.7 | 46.3 | 0.30 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C111 = -0.389



Correlation of QCa and QIR/R = 0.342

The regression equation is
 $QCa = 102 + 115 QIR/R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 102.0 | 160.4 | 0.64 |
| QIR/R | 115.37 | 53.57 | 2.15 |

$s = 172.2$ $R\text{-sq} = 11.7\%$ $R\text{-sq(adj)} = 9.2\%$

Analysis of Variance

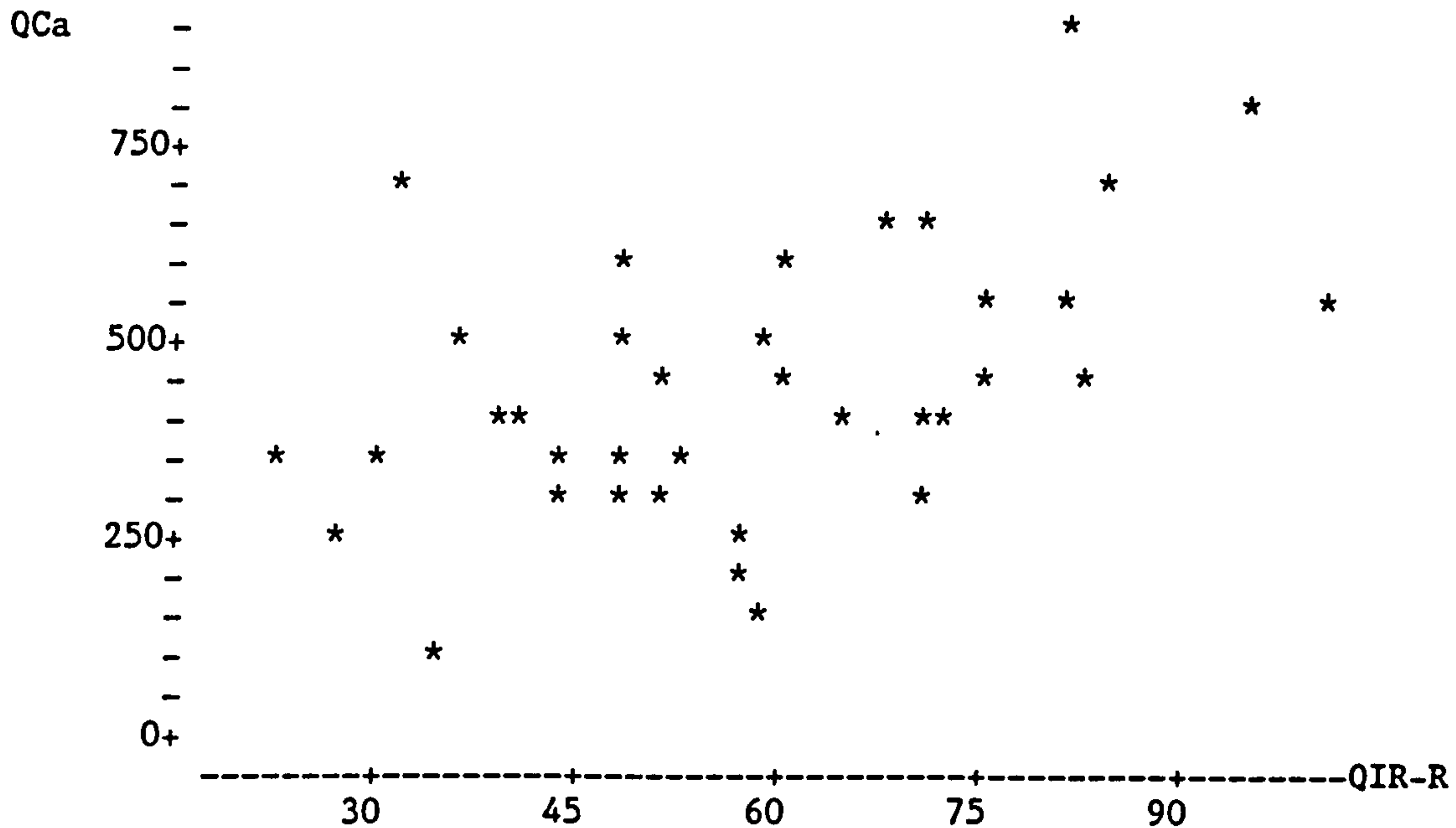
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 137531 | 137531 |
| Error | 35 | 1037727 | 29649 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | QIR/R | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 8 | 2.24 | 714.0 | 360.0 | 47.4 | 354.0 | 2.14R |
| 12 | 3.17 | 891.0 | 467.2 | 30.6 | 423.8 | 2.50R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C118 and C146 = 0.373



Correlation of QCa and QIR-R = 0.486

The regression equation is
 QCa = 177 + 4.58 QIR-R

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 177.38 | 84.66 | 2.10 |
| QIR-R | 4.585 | 1.394 | 3.29 |

s = 160.2 R-sq = 23.6% R-sq(adj) = 21.4%

Analysis of Variance

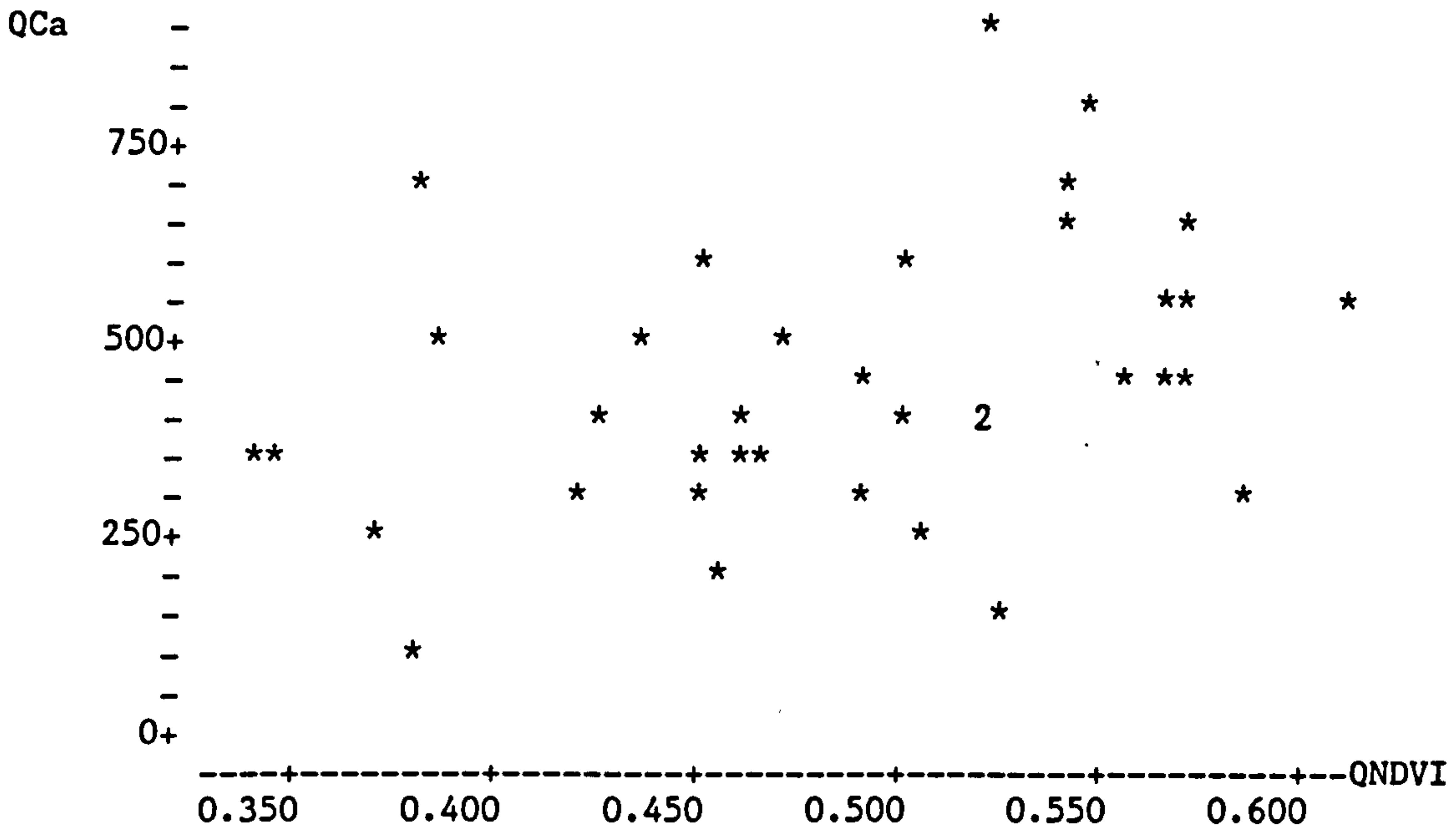
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 277343 | 277343 |
| Error | 35 | 897915 | 25655 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | QIR-R | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 8 | 32 | 714.0 | 325.0 | 44.2 | 389.0 | 2.53R |
| 12 | 81 | 891.0 | 549.1 | 41.9 | 341.9 | 2.21R |
| 28 | 101 | 558.0 | 640.4 | 65.8 | -82.4 | -0.56 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C118 and C147 = 0.478



Correlation of QCa and QNDVI = 0.340

The regression equation is
 QCa = 22 + 867 QNDVI

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | 22.3 | 197.9 | 0.11 |
| QNDVI | 867.1 | 404.7 | 2.14 |

s = 172.3 R-sq = 11.6% R-sq(adj) = 9.1%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 136248 | 136248 |
| Error | 35 | 1039010 | 29686 |
| Total | 36 | 1175258 | |

Unusual Observations

| Obs. | QNDVI | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 8 | 0.382 | 714.0 | 353.6 | 50.0 | 360.4 | 2.19R |
| 12 | 0.520 | 891.0 | 473.0 | 31.8 | 418.0 | 2.47R |

R denotes an obs. with a large st. resid.

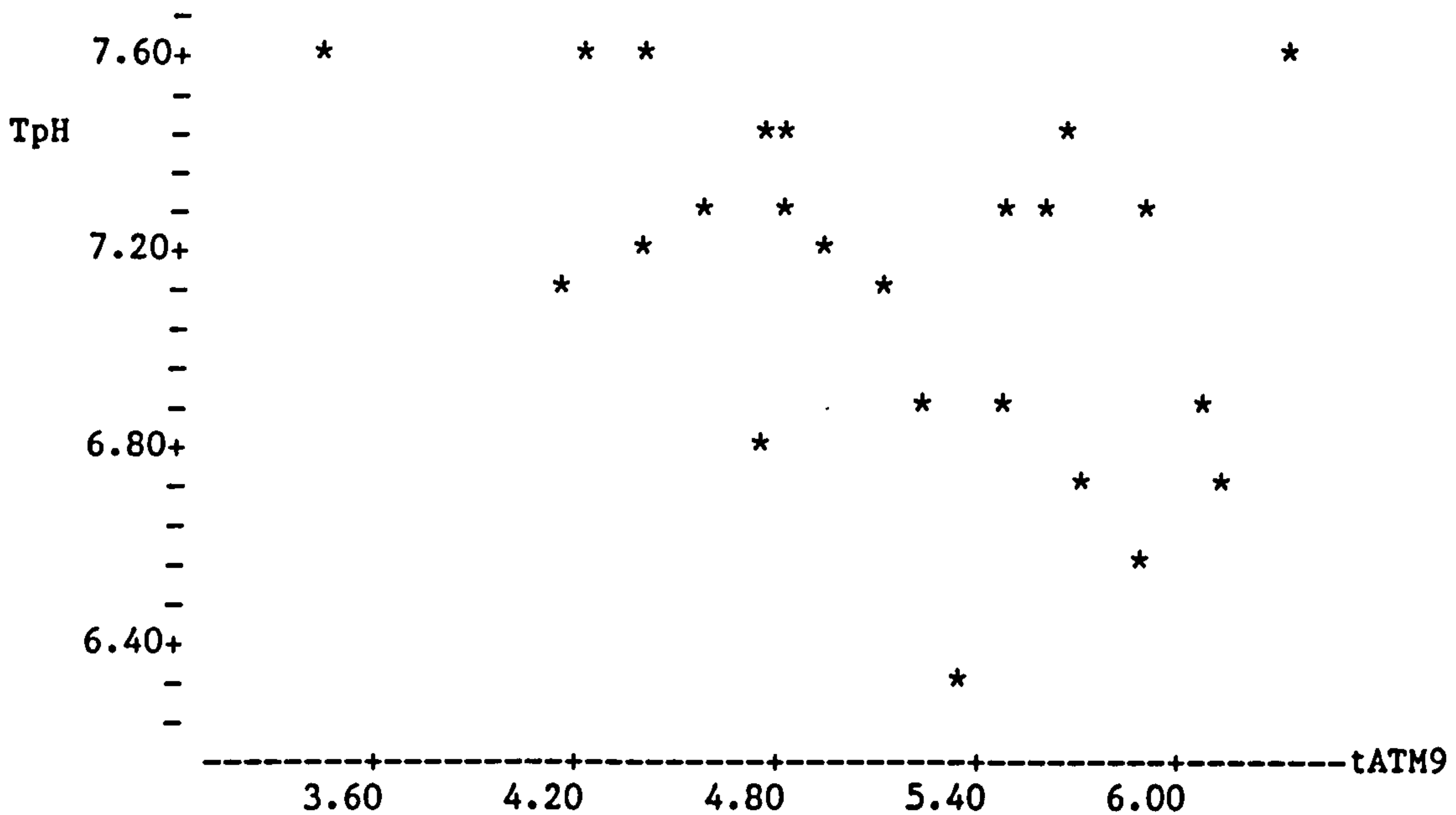
SPEARMAN RANK Correlation of C118 and C148 = 0.373

APPENDIX 3

CRYMLYN BOG STUDY

**RELATING AIRBORNE SCANNER DATA
TO FIELD-MEASURED VARIABLES**

**REGRESSION RESULTS AND SCATTER PLOTS
TRANSECT SAMPLES**



Correlation of TpH and tATM9 = -0.419

The regression equation is
 TpH = 8.18 - 0.203 tATM9

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 8.1772 | 0.4842 | 16.89 |
| tATM9 | -0.20252 | 0.09360 | -2.16 |

s = 0.3276 R-sq = 17.5% R-sq(adj) = 13.8%

Analysis of Variance

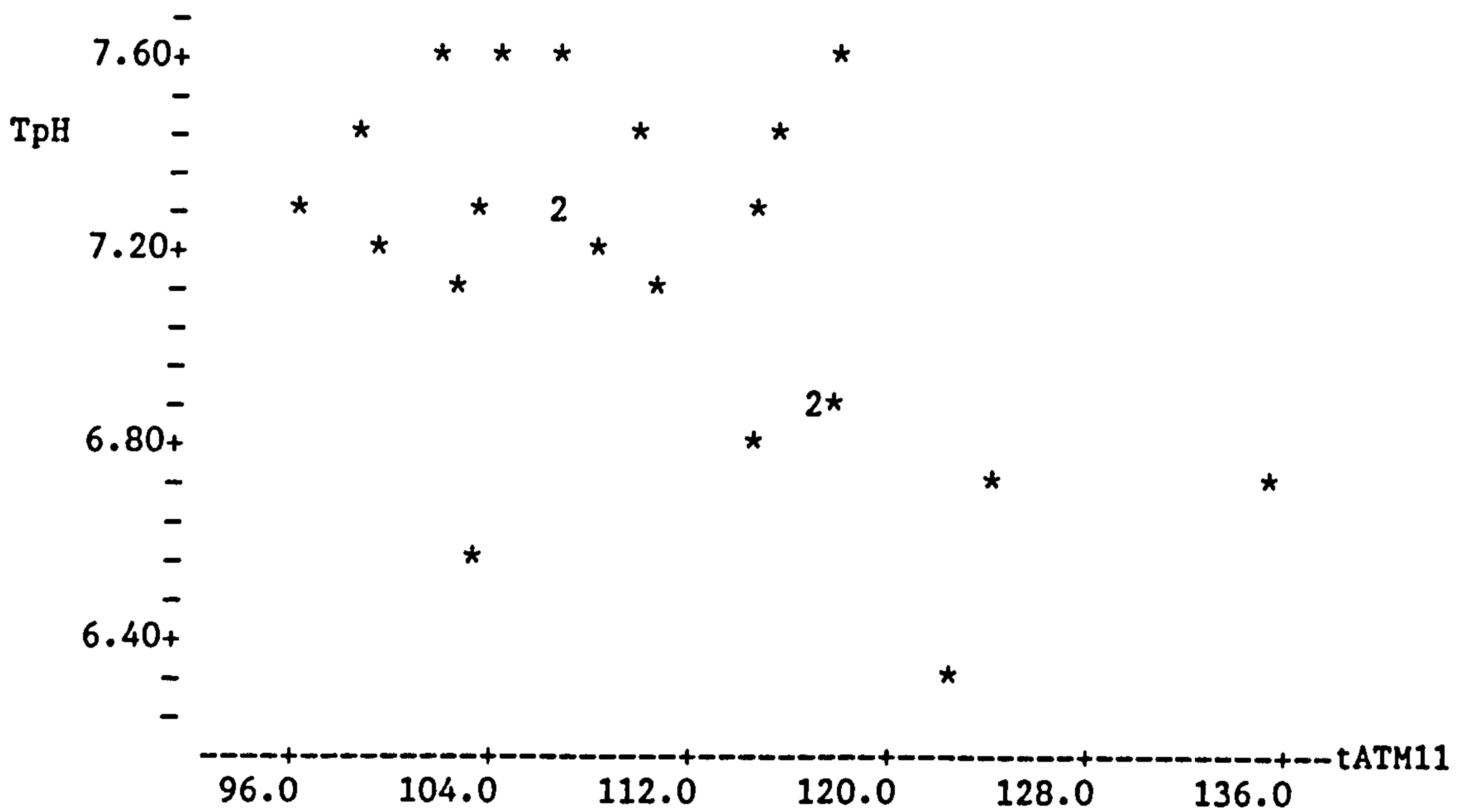
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 0.5026 | 0.5026 |
| Error | 22 | 2.3617 | 0.1074 |
| Total | 23 | 2.8643 | |

Unusual Observations

| Obs. | tATM9 | TpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 6 | 6.32 | 7.5900 | 6.8974 | 0.1304 | 0.6926 | 2.30R |
| 10 | 3.43 | 7.5600 | 7.4828 | 0.1722 | 0.0772 | 0.28 X |
| 22 | 5.33 | 6.3400 | 7.0986 | 0.0695 | -0.7586 | -2.37R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C131 and C127 = -0.386



Correlation of TpH and tATM11 = -0.546

The regression equation is
 TpH = 9.44 - 0.0208 tATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 9.4358 | 0.7539 | 12.52 |
| tATM11 | -0.020778 | 0.006799 | -3.06 |

s = 0.3023 R-sq = 29.8% R-sq(adj) = 26.6%

Analysis of Variance

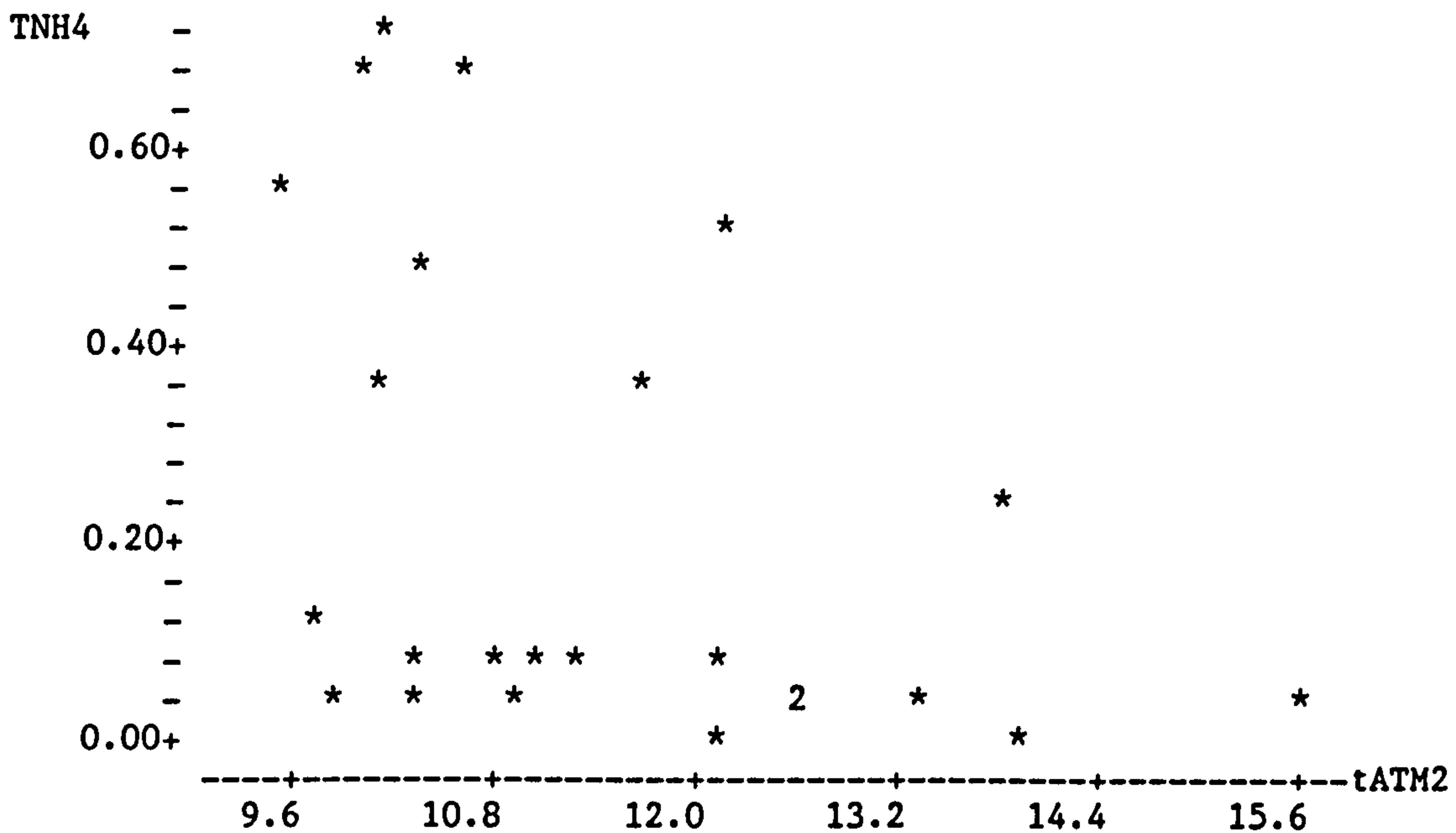
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.85352 | 0.85352 |
| Error | 22 | 2.01078 | 0.09140 |
| Total | 23 | 2.86430 | |

Unusual Observations

| Obs. | tATM11 | TpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|--------|-----------|----------|----------|
| 6 | 118 | 7.5900 | 6.9944 | 0.0779 | 0.5956 | 2.04R |
| 20 | 135 | 6.6900 | 6.6255 | 0.1792 | 0.0645 | 0.26 X |
| 24 | 104 | 6.5800 | 7.2852 | 0.0780 | -0.7052 | -2.41R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C131 and C129 = -0.455



Correlation of TNH4 and tATM2 = -0.409

The regression equation is
 TNH4 = 0.963 - 0.0647 tATM2

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 0.9625 | 0.3553 | 2.71 |
| tATM2 | -0.06468 | 0.03076 | -2.10 |

s = 0.2329 R-sq = 16.7% R-sq(adj) = 13.0%

Analysis of Variance

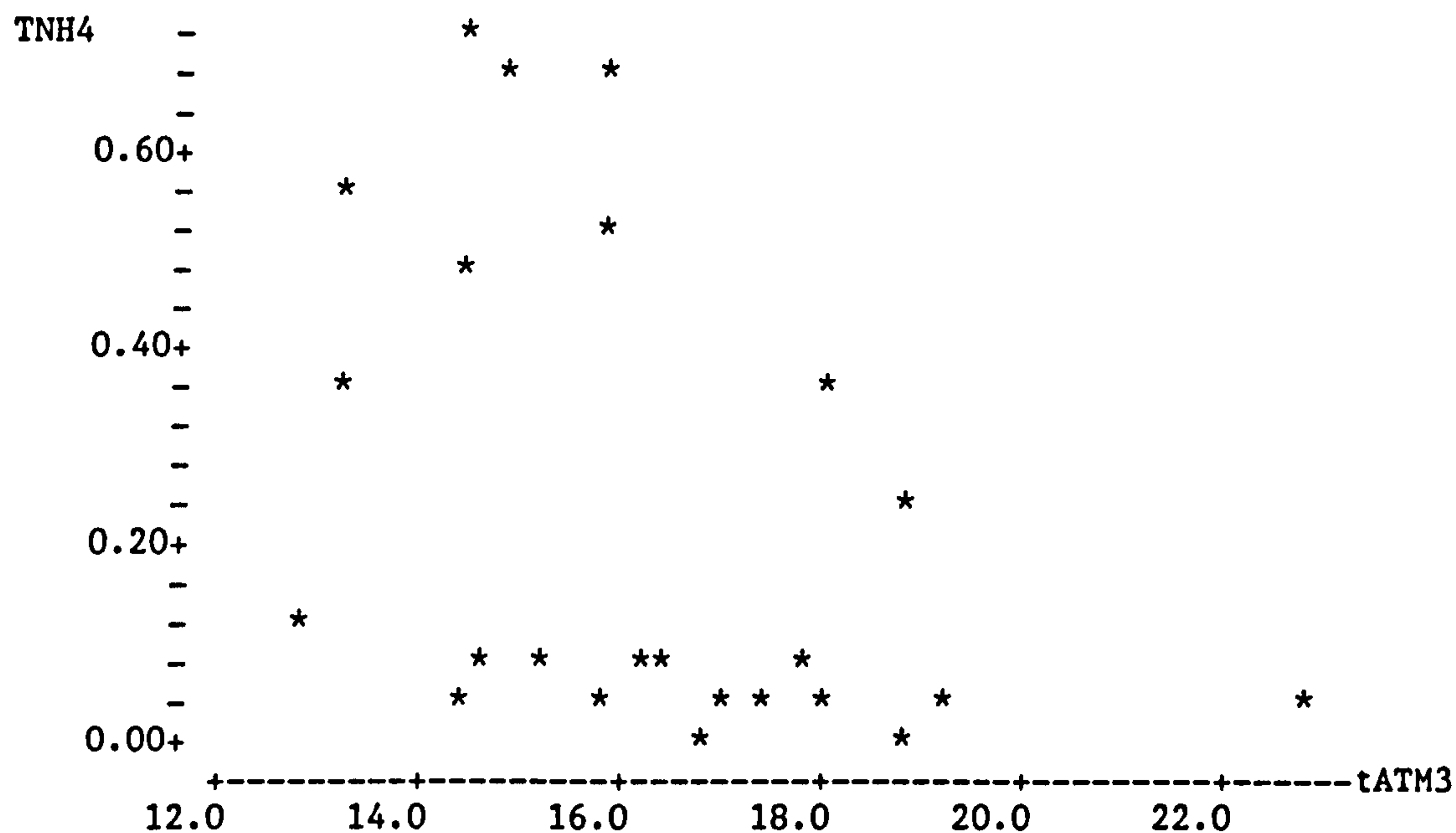
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.23996 | 0.23996 |
| Error | 22 | 1.19384 | 0.05427 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | tATM2 | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|---------|-----------|----------|----------|
| 6 | 15.6 | 0.0500 | -0.0468 | 0.1364 | 0.0968 | 0.51 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C132 and C120 = -0.491



Correlation of TNH4 and tATM3 = -0.423

The regression equation is
 TNH4 = 0.971 - 0.0459 tATM3

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 0.9707 | 0.3454 | 2.81 |
| tATM3 | -0.04591 | 0.02099 | -2.19 |

s = 0.2314 R-sq = 17.9% R-sq(adj) = 14.1%

Analysis of Variance

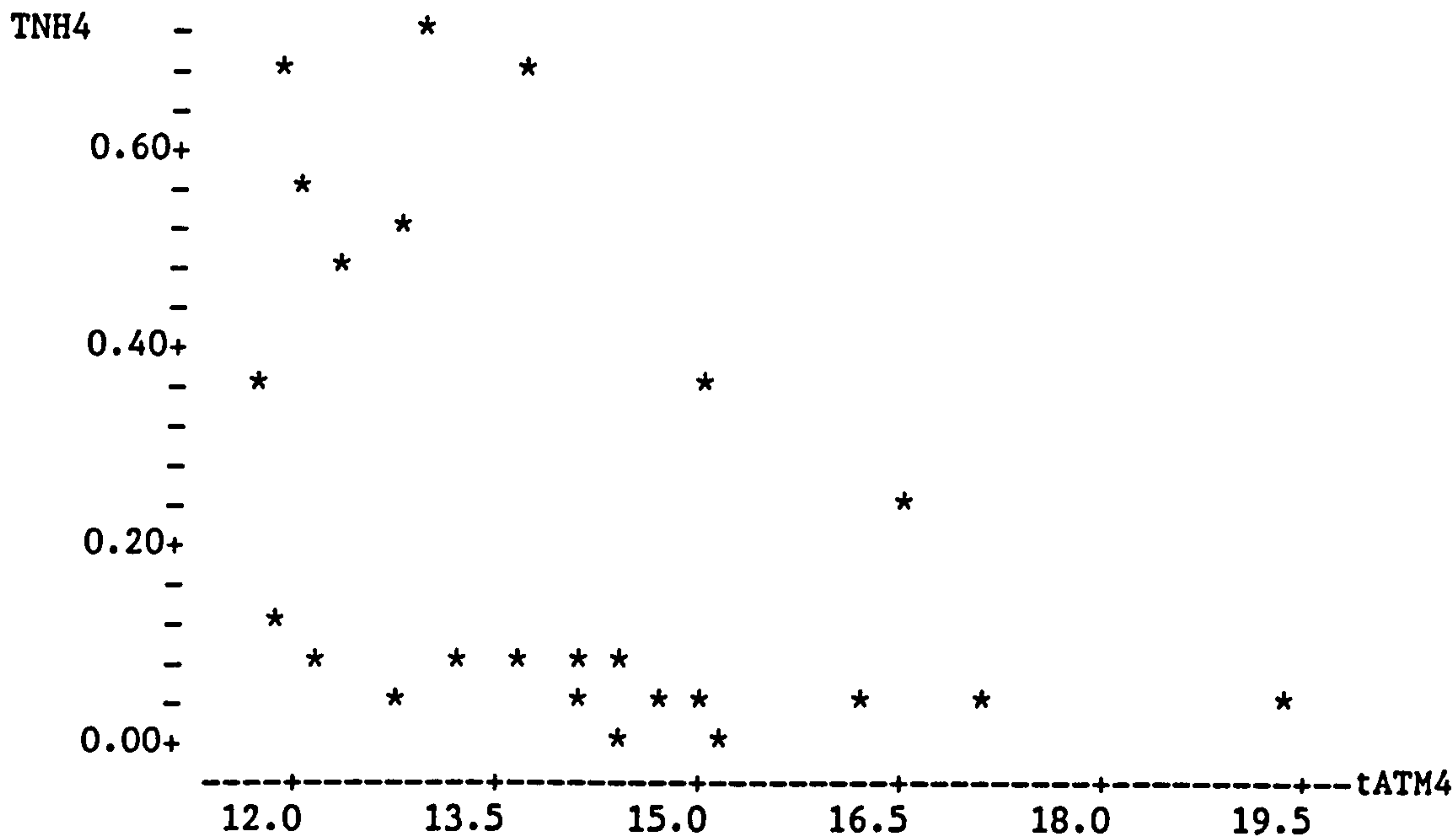
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.25620 | 0.25620 |
| Error | 22 | 1.17760 | 0.05353 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | tATM3 | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|---------|-----------|----------|----------|
| 6 | 22.7 | 0.0500 | -0.0721 | 0.1425 | 0.1221 | 0.67 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C132 and C121 = -0.520



Correlation of TNH4 and tATM4 = -0.474

The regression equation is
 TNH4 = 1.10 - 0.0626 tATM4

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 1.1004 | 0.3505 | 3.14 |
| tATM4 | -0.06259 | 0.02476 | -2.53 |

s = 0.2247 R-sq = 22.5% R-sq(adj) = 19.0%

Analysis of Variance

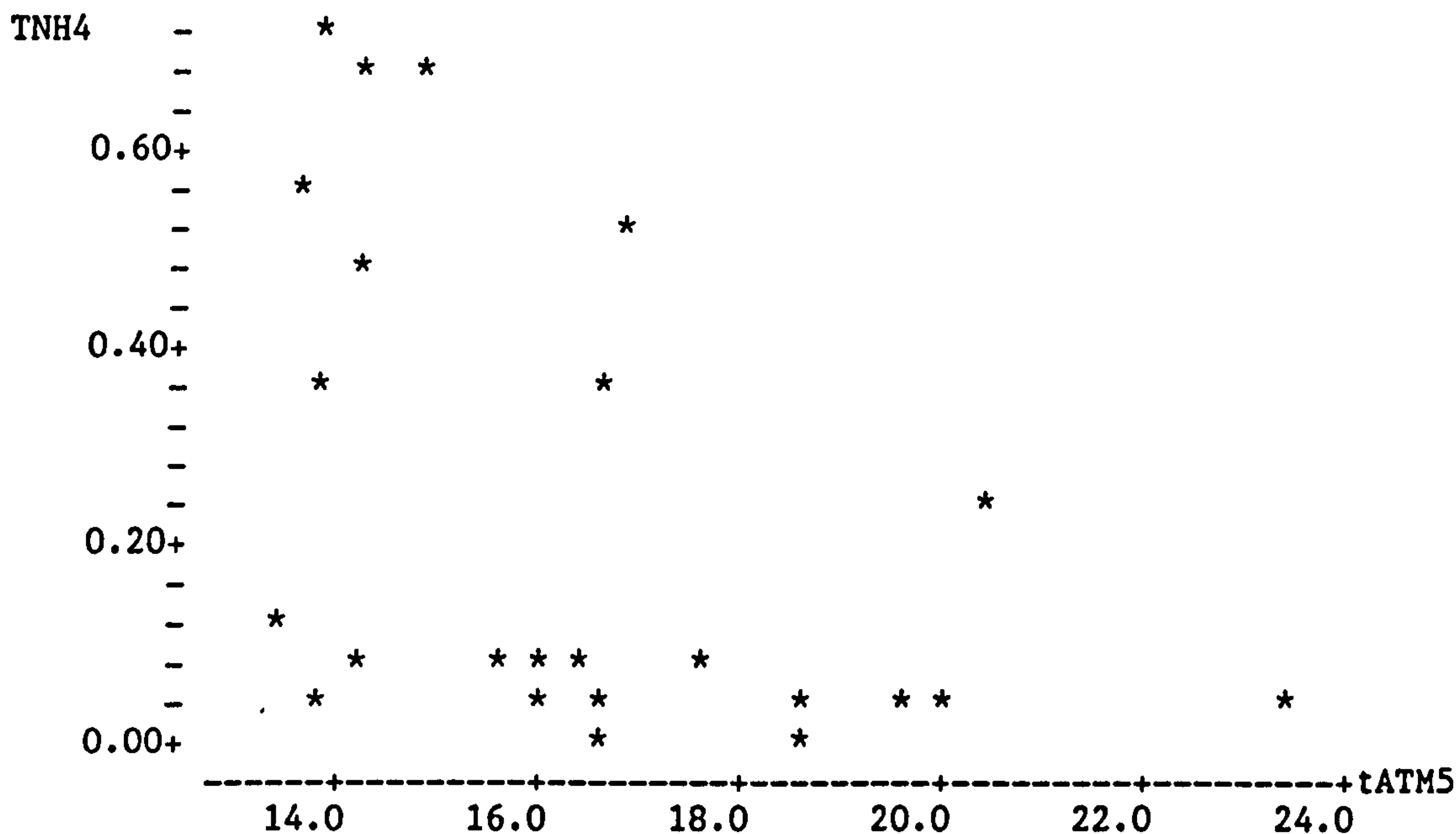
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.32274 | 0.32274 |
| Error | 22 | 1.11105 | 0.05050 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | tATM4 | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|---------|-----------|----------|----------|
| 6 | 19.3 | 0.0500 | -0.1073 | 0.1381 | 0.1573 | 0.89 X |
| 23 | 13.6 | 0.6900 | 0.2503 | 0.0472 | 0.4397 | 2.00R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C132 and C122 = -0.586



Correlation of TNH4 and tATM5 = -0.464

The regression equation is
 TNH4 = 0.959 - 0.0448 tATM5

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 0.9591 | 0.3032 | 3.16 |
| tATM5 | -0.04481 | 0.01822 | -2.46 |

s = 0.2261 R-sq = 21.6% R-sq(adj) = 18.0%

Analysis of Variance

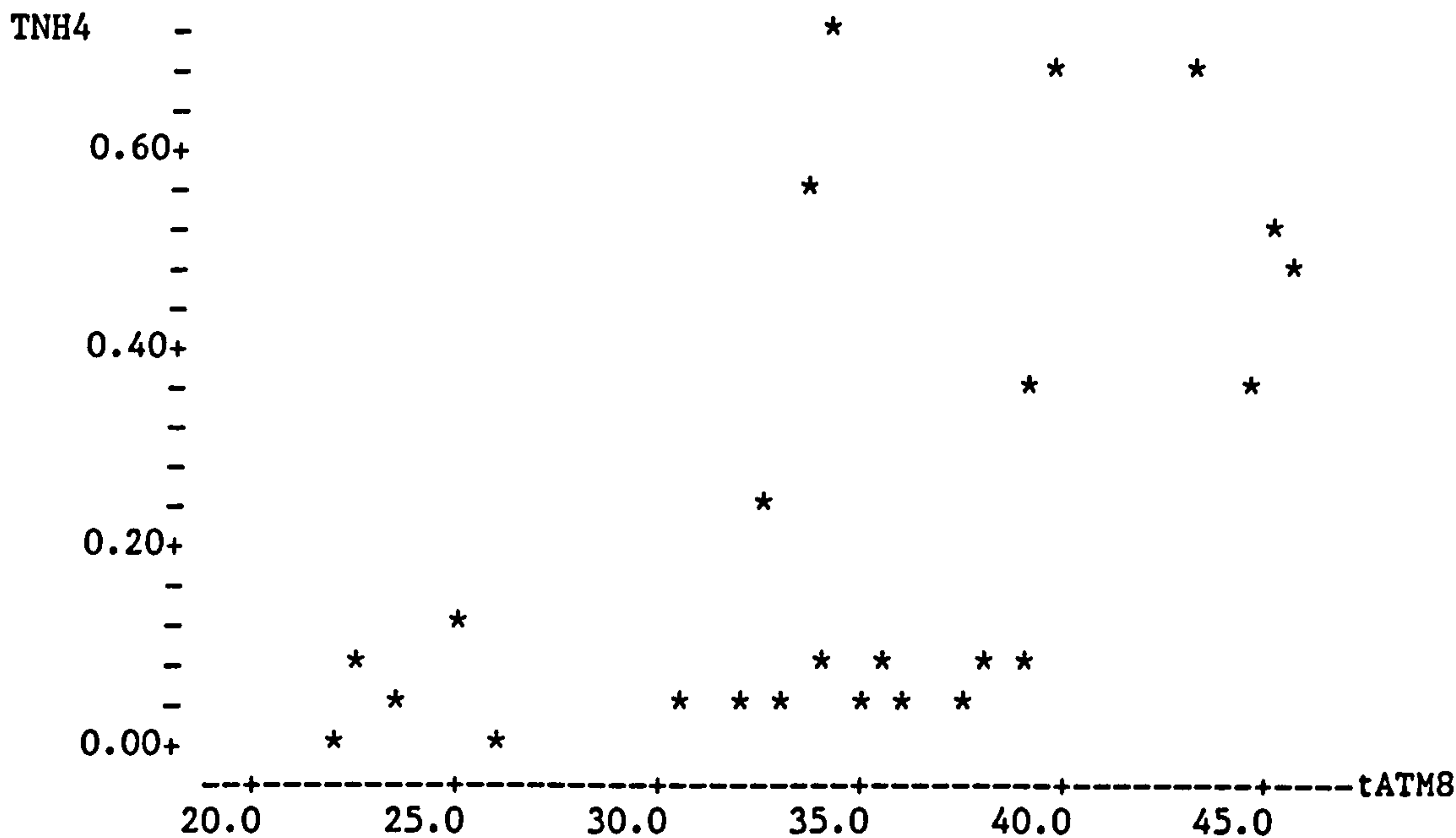
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.30927 | 0.30927 |
| Error | 22 | 1.12452 | 0.05111 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | tATM5 | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|---------|-----------|----------|----------|
| 6 | 23.4 | 0.0500 | -0.0875 | 0.1340 | 0.1375 | 0.75 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C132 and C123 = -0.504



Correlation of TNH4 and tATM8 = 0.564

The regression equation is
 TNH4 = - 0.472 + 0.0202 tATM8

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -0.4718 | 0.2206 | -2.14 |
| tATM8 | 0.020164 | 0.006287 | 3.21 |

s = 0.2107 R-sq = 31.9% R-sq(adj) = 28.8%

Analysis of Variance

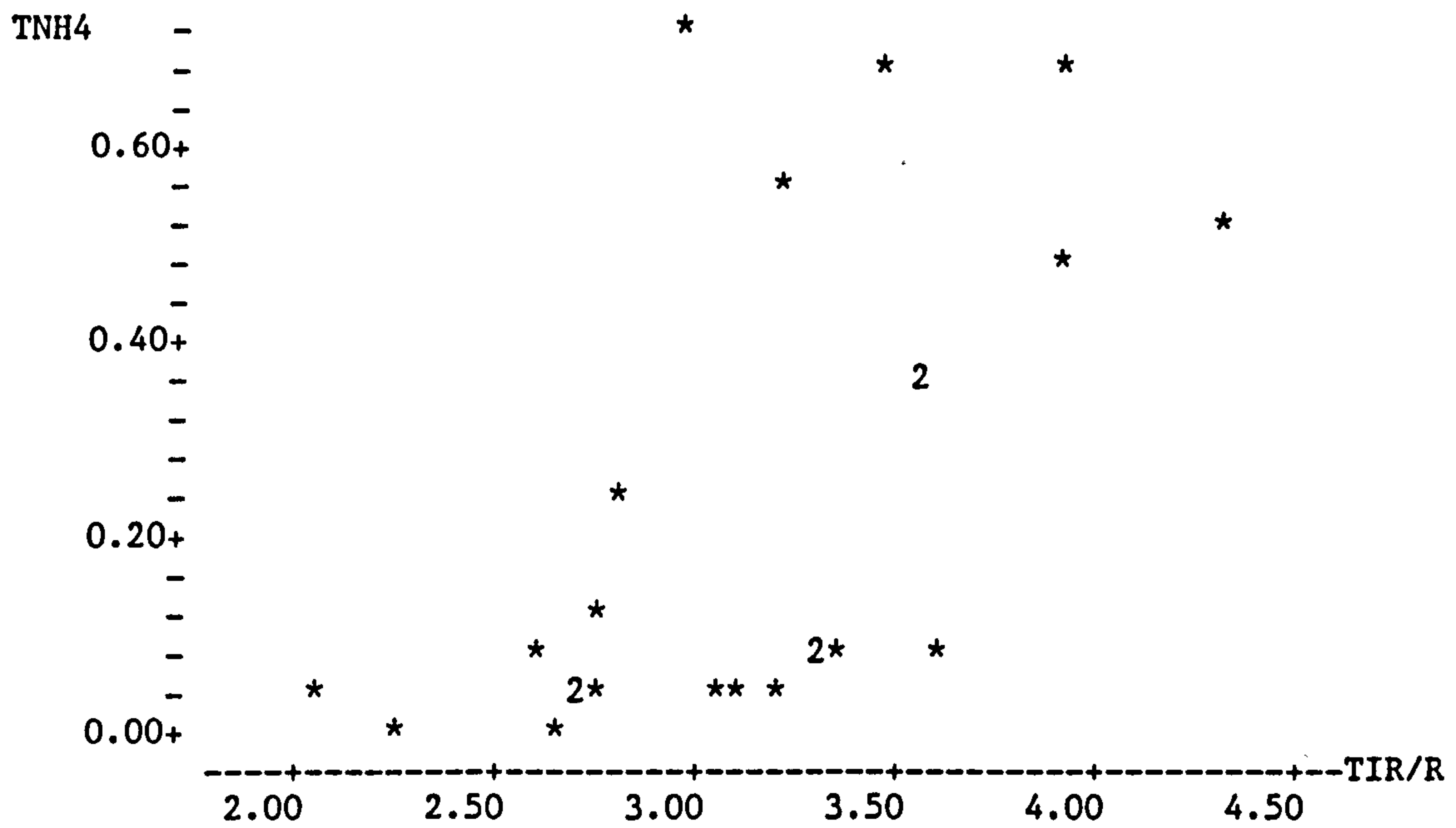
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.45682 | 0.45682 |
| Error | 22 | 0.97697 | 0.04441 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | tATM8 | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 20 | 34.0 | 0.7100 | 0.2146 | 0.0431 | 0.4954 | 2.40R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C132 and C126 = 0.565



Correlation of TNH4 and TIR/R = 0.593

The regression equation is
 TNH4 = - 0.646 + 0.278 TIR/R

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -0.6457 | 0.2546 | -2.54 |
| TIR/R | 0.27801 | 0.08045 | 3.46 |

s = 0.2055 R-sq = 35.2% R-sq(adj) = 32.2%

Analysis of Variance

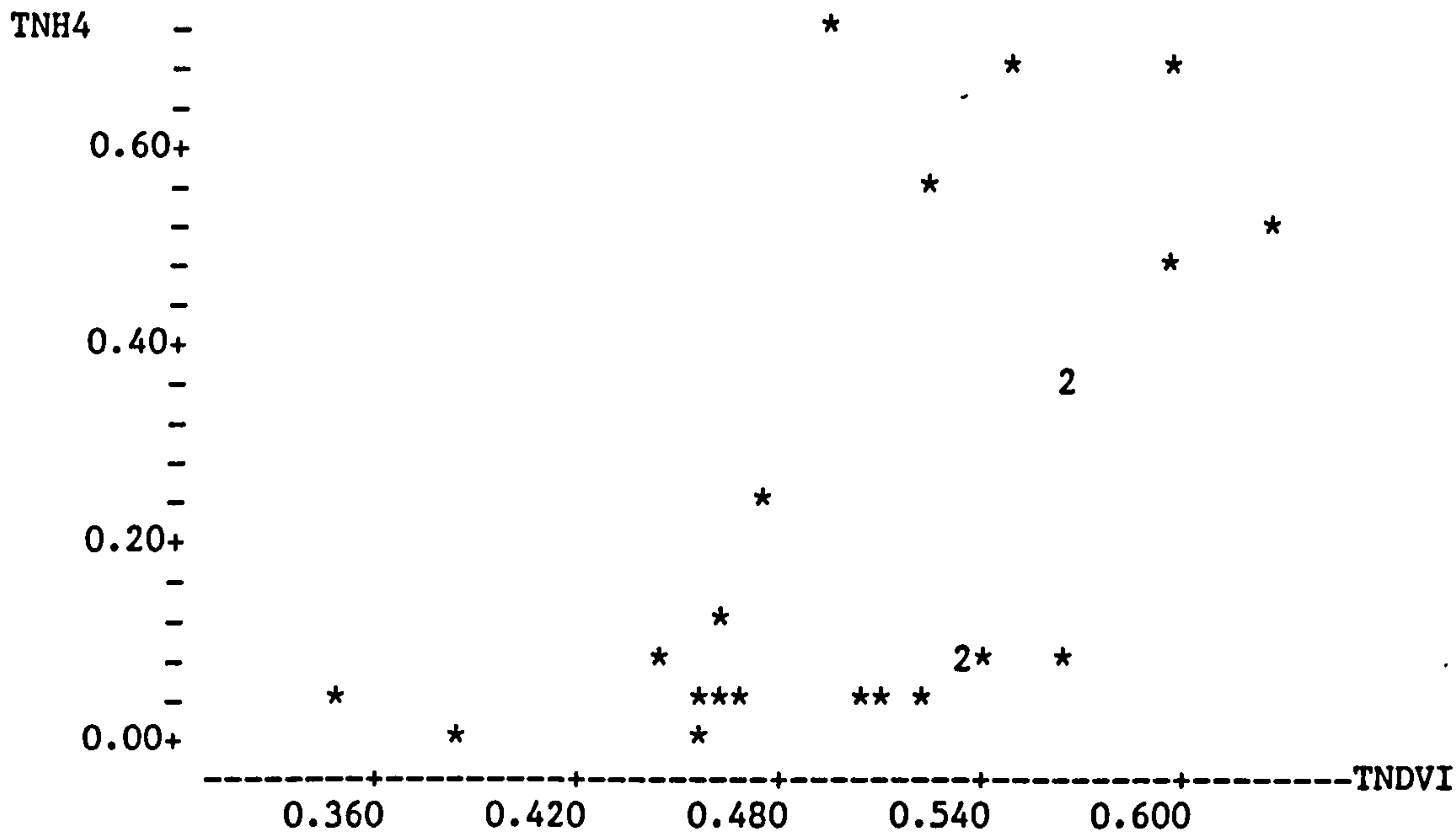
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.50446 | 0.50446 |
| Error | 22 | 0.92934 | 0.04224 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | TIR/R | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 20 | 2.93 | 0.7100 | 0.1675 | 0.0448 | 0.5425 | 2.70R |
| 24 | 4.31 | 0.5300 | 0.5519 | 0.1042 | -0.0219 | -0.12 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C132 and C151 = 0.653



Correlation of TNH4 and TNDVI = 0.567

The regression equation is
 TNH4 = - 0.883 + 2.18 TNDVI

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | -0.8830 | 0.3448 | -2.56 |
| TNDVI | 2.1805 | 0.6752 | 3.23 |

s = 0.2103 R-sq = 32.2% R-sq(adj) = 29.1%

Analysis of Variance

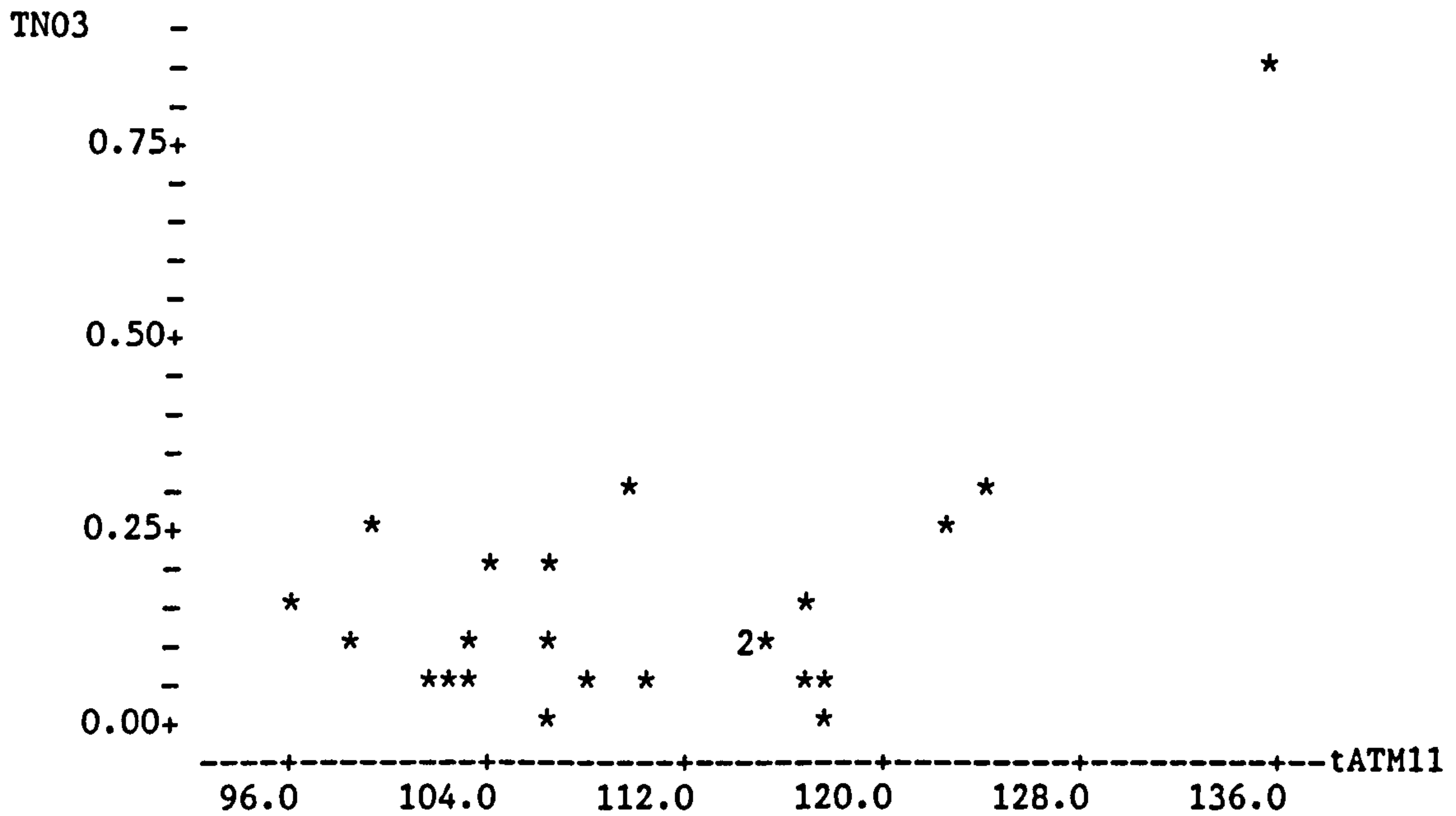
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.46114 | 0.46114 |
| Error | 22 | 0.97265 | 0.04421 |
| Total | 23 | 1.43380 | |

Unusual Observations

| Obs. | TNDVI | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|---------|-----------|----------|----------|
| 1 | 0.349 | 0.0200 | -0.1228 | 0.1151 | 0.1428 | 0.81 X |
| 20 | 0.490 | 0.7100 | 0.1865 | 0.0443 | 0.5235 | 2.55R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C132 and C153 = 0.653



Correlation of TN03 and tATM11 = 0.554

The regression equation is

$$TN03 = -0.971 + 0.0101 tATM11$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -0.9705 | 0.3598 | -2.70 |
| tATM11 | 0.010121 | 0.003245 | 3.12 |

s = 0.1443 R-sq = 30.7% R-sq(adj) = 27.5%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.20250 | 0.20250 |
| Error | 22 | 0.45790 | 0.02081 |
| Total | 23 | 0.66040 | |

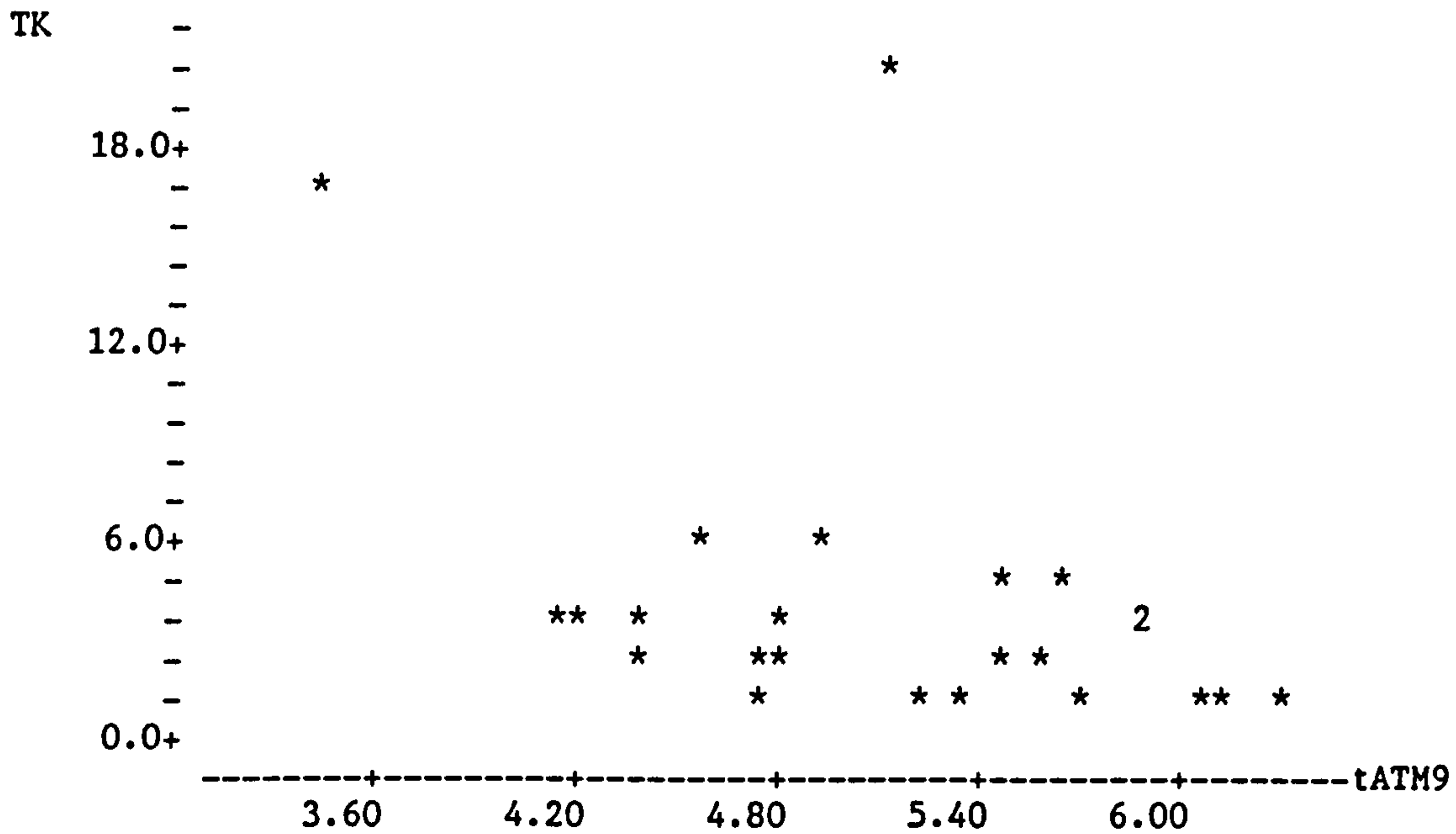
Unusual Observations

| Obs. | tATM11 | TN03 | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|--------|-----------|----------|----------|
| 20 | 135 | 0.8300 | 0.3983 | 0.0855 | 0.4317 | 3.72RX |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C133 and C129 = 0.103



Correlation of TK and tATM9 = -0.404

The regression equation is
 TK = 17.3 - 2.58 tATM9

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 17.330 | 6.436 | 2.69 |
| tATM9 | -2.581 | 1.244 | -2.07 |

s = 4.355 R-sq = 16.4% R-sq(adj) = 12.6%

Analysis of Variance

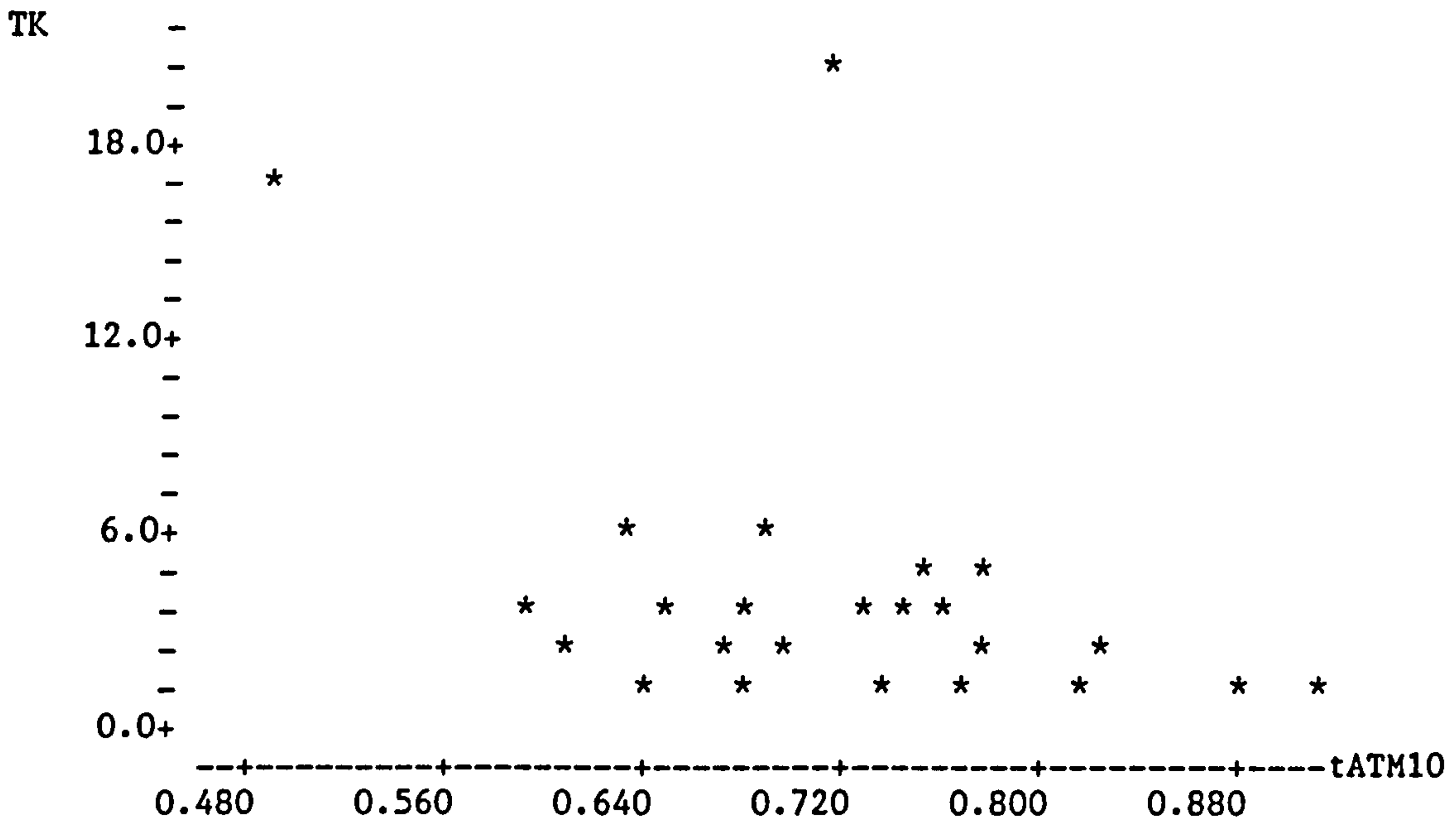
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 81.60 | 81.60 |
| Error | 22 | 417.30 | 18.97 |
| Total | 23 | 498.90 | |

Unusual Observations

| Obs. | tATM9 | TK | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 9 | 5.10 | 20.000 | 4.169 | 0.889 | 15.831 | 3.71R |
| 10 | 3.43 | 17.000 | 8.482 | 2.288 | 8.518 | 2.30RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C134 and C127 = -0.372



Correlation of TK and tATM10 = -0.437

The regression equation is
 TK = 19.6 - 21.6 tATM10

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | 19.570 | 6.841 | 2.86 |
| tATM10 | -21.574 | 9.467 | -2.28 |

s = 4.283 R-sq = 19.1% R-sq(adj) = 15.4%

Analysis of Variance

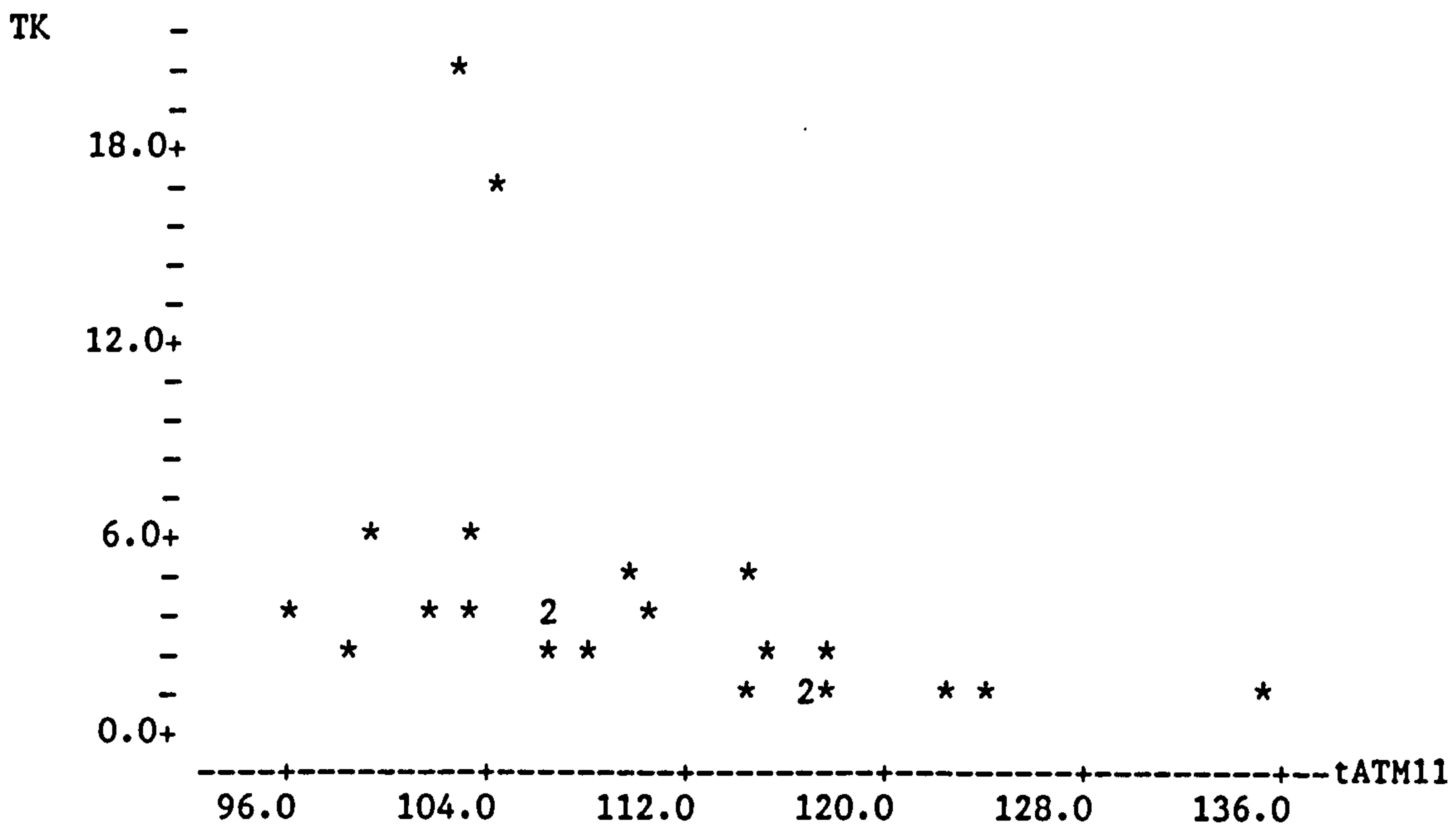
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 95.28 | 95.28 |
| Error | 22 | 403.62 | 18.35 |
| Total | 23 | 498.90 | |

Unusual Observations

| Obs. | tATM10 | TK | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|-------|-----------|----------|----------|
| 9 | 0.708 | 20.000 | 4.285 | 0.878 | 15.715 | 3.75R |
| 10 | 0.484 | 17.000 | 9.119 | 2.366 | 7.881 | 2.21RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C134 and C128 = -0.363



Correlation of TK and tATM11 = -0.406

The regression equation is
 TK = 26.6 - 0.204 tATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 26.64 | 10.85 | 2.45 |
| tATM11 | -0.20385 | 0.09789 | -2.08 |

s = 4.352 R-sq = 16.5% R-sq(adj) = 12.7%

Analysis of Variance

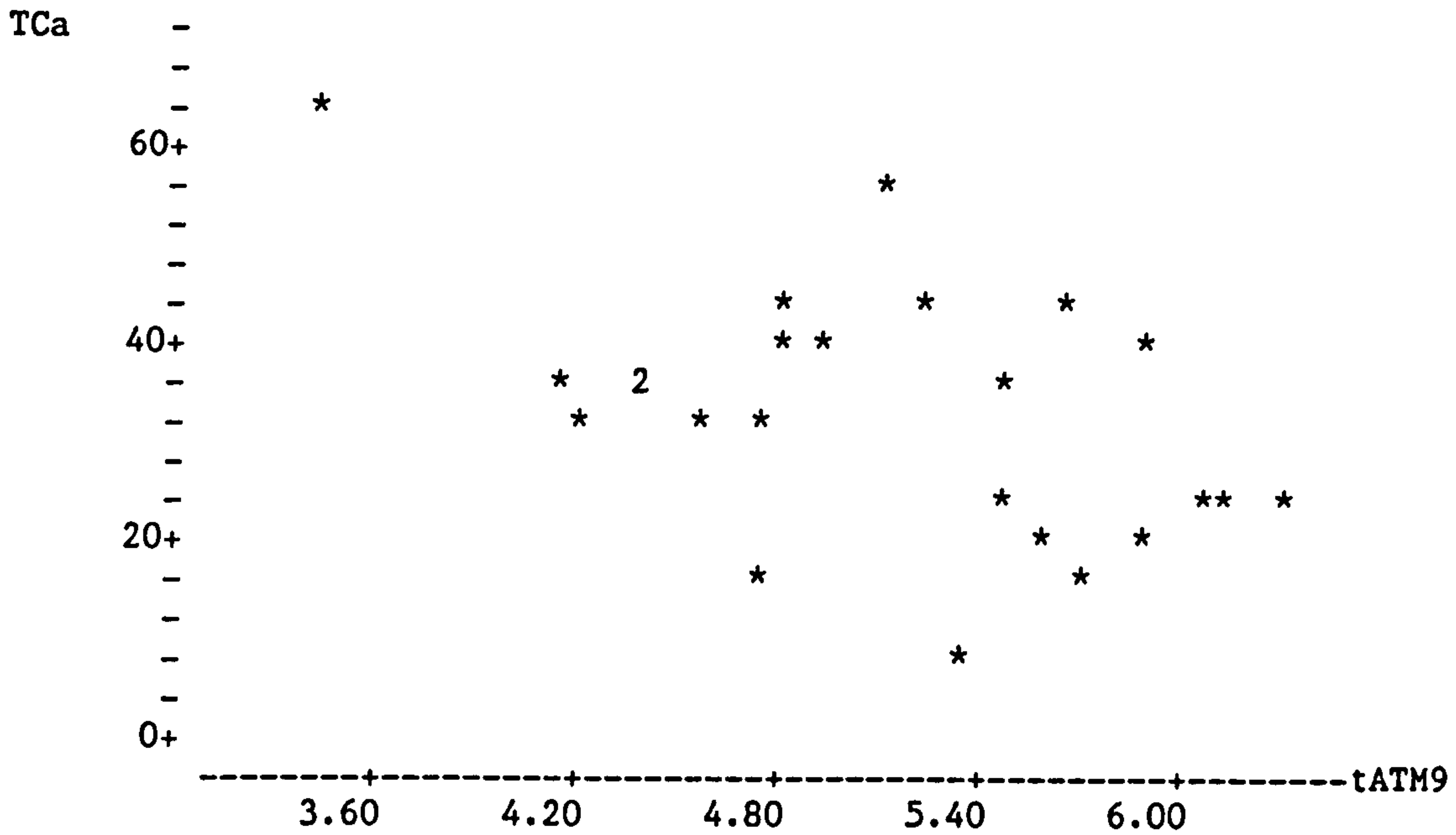
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 82.15 | 82.15 |
| Error | 22 | 416.75 | 18.94 |
| Total | 23 | 498.90 | |

Unusual Observations

| Obs. | tATM11 | TK | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|--------|-----------|----------|----------|
| 9 | 103 | 20.000 | 5.741 | 1.185 | 14.259 | 3.40R |
| 10 | 104 | 17.000 | 5.385 | 1.079 | 11.615 | 2.75R |
| 20 | 135 | 1.500 | -0.935 | 2.580 | 2.435 | 0.69 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C134 and C129 = -0.671



Correlation of TCa and tATM9 = -0.505

The regression equation is
 TCa = 78.9 - 9.03 tATM9

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 78.87 | 17.00 | 4.64 |
| tATM9 | -9.029 | 3.287 | -2.75 |

s = 11.51 R-sq = 25.5% R-sq(adj) = 22.2%

Analysis of Variance

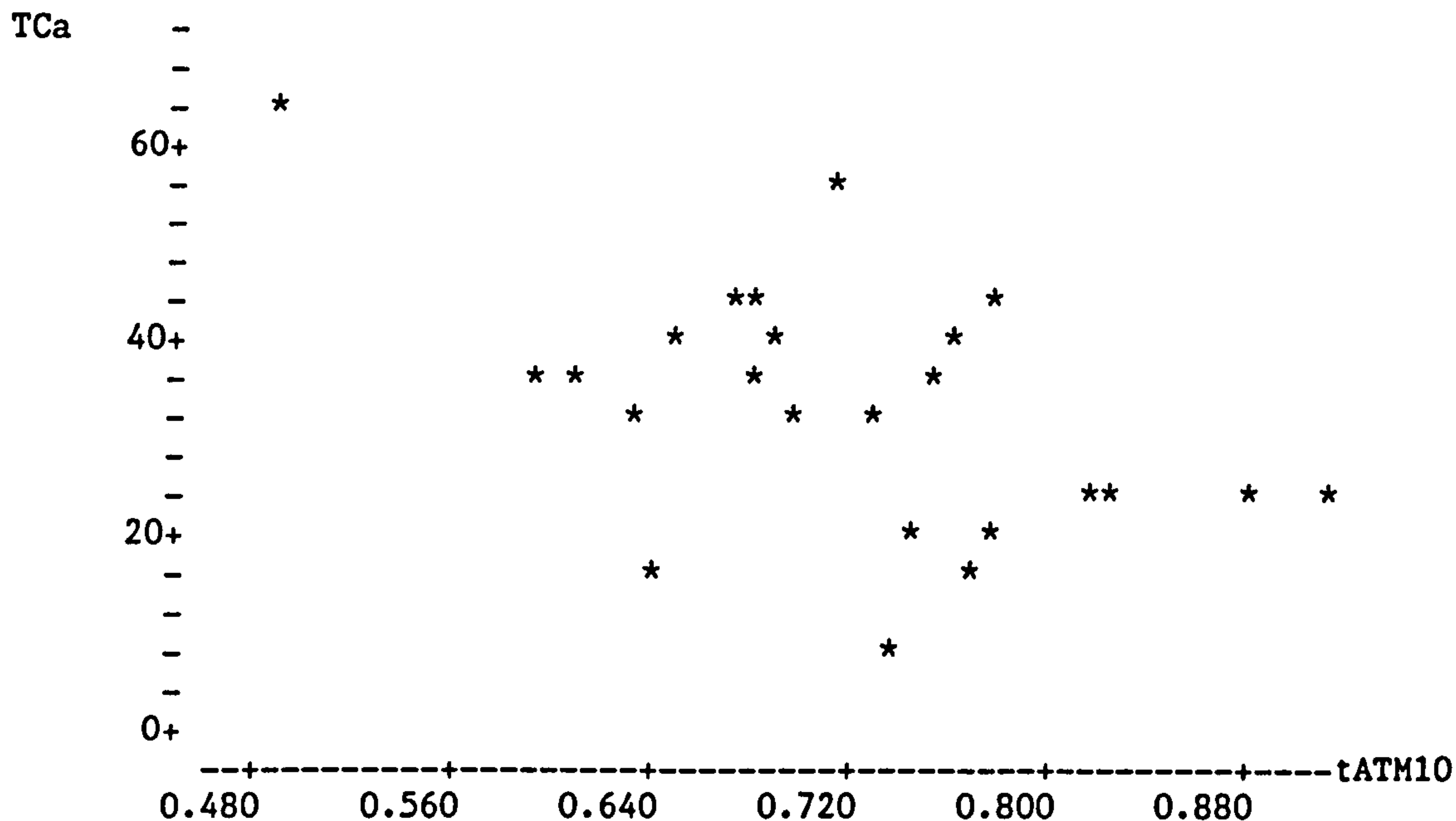
| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 999.0 | 999.0 |
| Error | 22 | 2912.7 | 132.4 |
| Total | 23 | 3911.7 | |

Unusual Observations

| Obs. | tATM9 | TCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 10 | 3.43 | 64.30 | 47.91 | 6.05 | 16.39 | 1.67 X |
| 22 | 5.33 | 7.60 | 30.78 | 2.44 | -23.18 | -2.06R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C135 and C127 = -0.339



Correlation of TCa and tATM10 = -0.543

The regression equation is
 TCa = 86.4 - 75.0 tATM10

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 86.39 | 17.89 | 4.83 |
| tATM10 | -75.04 | 24.75 | -3.03 |

s = 11.20 R-sq = 29.5% R-sq(adj) = 26.3%

Analysis of Variance

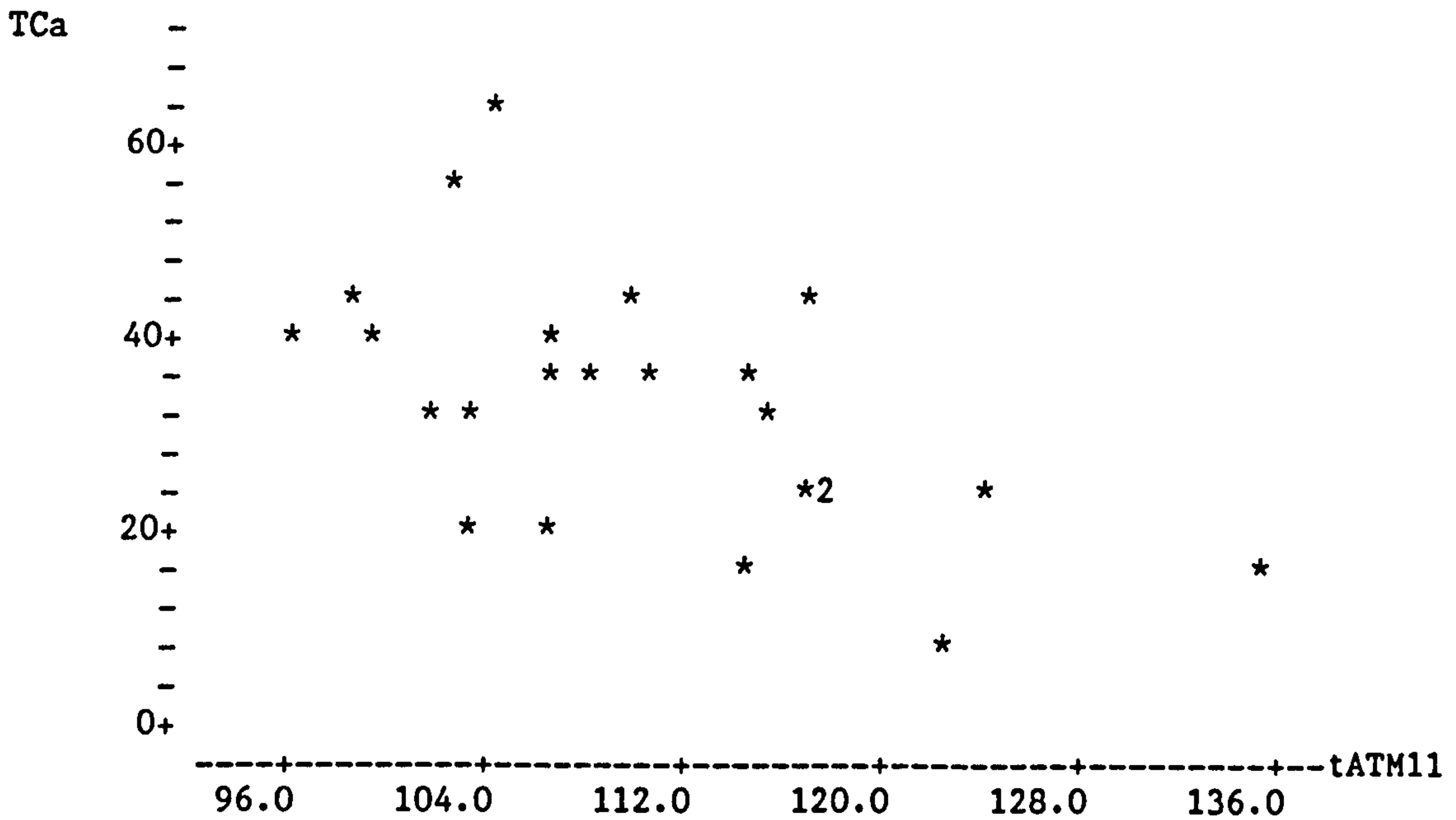
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 1152.7 | 1152.7 |
| Error | 22 | 2759.0 | 125.4 |
| Total | 23 | 3911.7 | |

Unusual Observations

| Obs. | tATM10 | TCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 9 | 0.708 | 55.30 | 33.22 | 2.29 | 22.08 | 2.01R |
| 10 | 0.484 | 64.30 | 50.04 | 6.19 | 14.26 | 1.53 X |
| 21 | 0.643 | 16.50 | 38.14 | 2.93 | -21.64 | -2.00R |
| 22 | 0.736 | 7.60 | 31.17 | 2.33 | -23.57 | -2.15R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C135 and C128 = -0.423



Correlation of TCa and tATM11 = -0.582

The regression equation is
 $TCa = 123 - 0.818 tATM11$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 123.05 | 27.05 | 4.55 |
| tATM11 | -0.8184 | 0.2439 | -3.36 |

s = 10.85 R-sq = 33.8% R-sq(adj) = 30.8%

Analysis of Variance

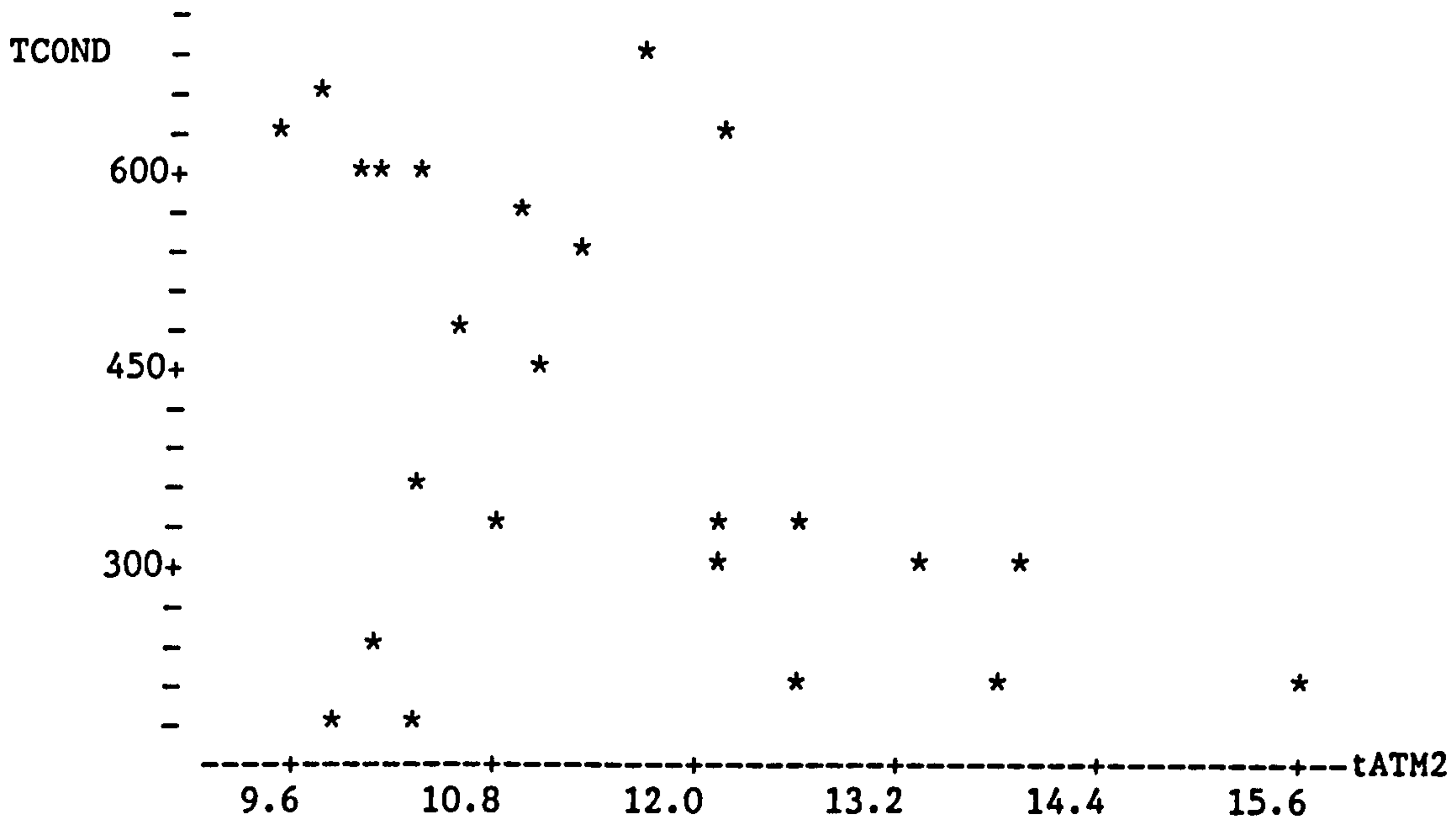
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 1324.1 | 1324.1 |
| Error | 22 | 2587.6 | 117.6 |
| Total | 23 | 3911.7 | |

Unusual Observations

| Obs. | tATM11 | TCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 10 | 104 | 64.30 | 37.73 | 2.69 | 26.57 | 2.53R |
| 20 | 135 | 16.20 | 12.36 | 6.43 | 3.84 | 0.44 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C135 and C129 = -0.565



Correlation of TCOND and tATM2 = -0.450

The regression equation is
 TCOND = 985 - 50.0 tATM2

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 985.0 | 244.4 | 4.03 |
| tATM2 | -49.96 | 21.16 | -2.36 |

s = 160.3 R-sq = 20.2% R-sq(adj) = 16.6%

Analysis of Variance

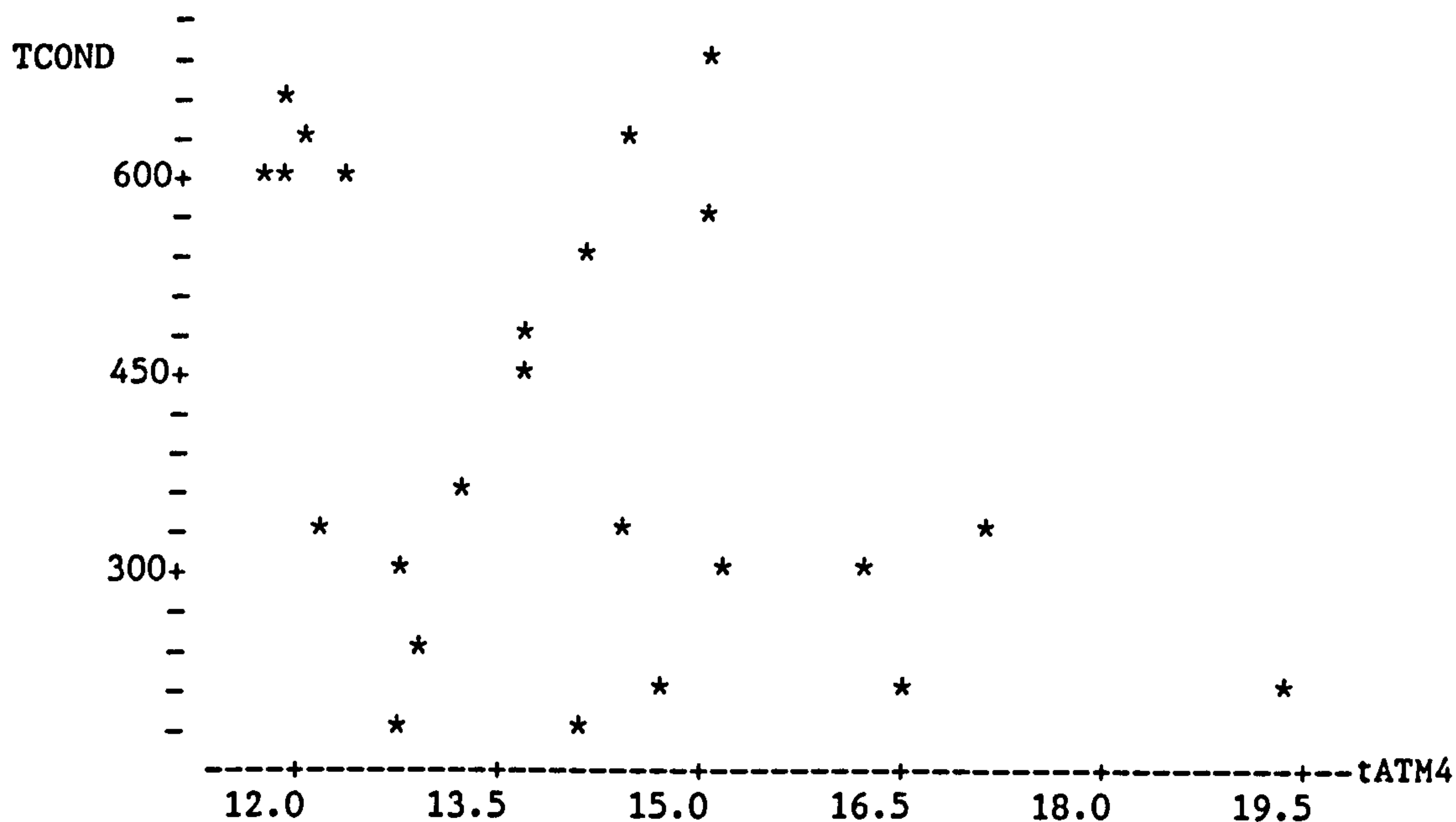
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 143176 | 143176 |
| Error | 22 | 564981 | 25681 |
| Total | 23 | 708157 | |

Unusual Observations

| Obs. | tATM2 | TCOND | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 15.6 | 211.0 | 205.3 | 93.9 | 5.7 | 0.04 X |
| 22 | 9.8 | 185.0 | 496.1 | 48.0 | -311.1 | -2.03R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C136 and C120 = -0.380



Correlation of TCOND and tATM4 = -0.423

The regression equation is
 TCOND = 963 - 39.2 tATM4

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 963.4 | 253.5 | 3.80 |
| tATM4 | -39.22 | 17.91 | -2.19 |

s = 162.6 R-sq = 17.9% R-sq(adj) = 14.2%

Analysis of Variance

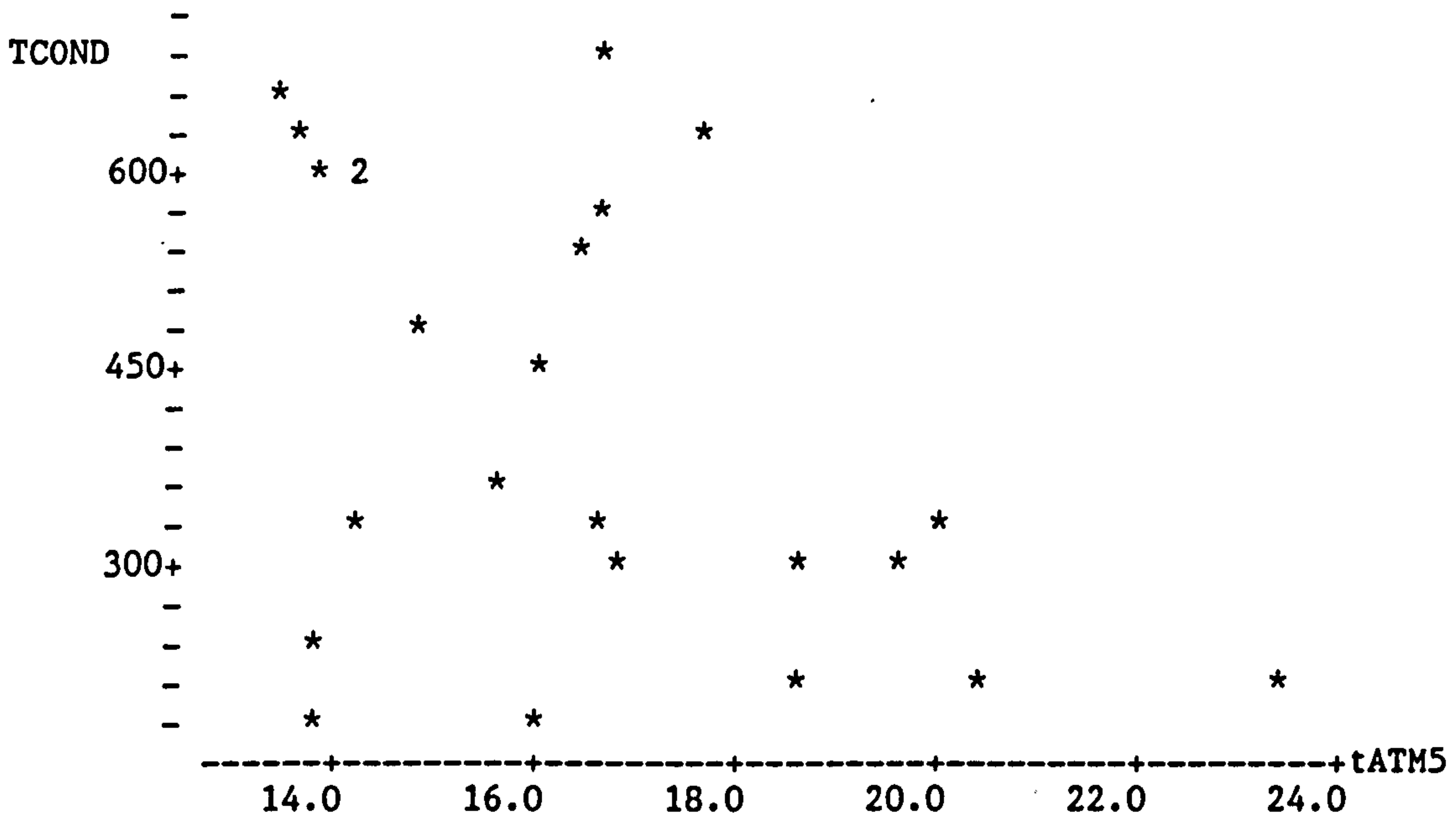
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 126734 | 126734 |
| Error | 22 | 581423 | 26428 |
| Total | 23 | 708157 | |

Unusual Observations

| Obs. | tATM4 | TCOND | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 19.3 | 211.0 | 206.6 | 99.9 | 4.4 | 0.03 X |
| 18 | 15.0 | 698.0 | 376.7 | 37.1 | 321.3 | 2.03R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C136 and C122 = -0.386



Correlation of TCOND and tATM5 = -0.448

The regression equation is
 TCOND = 913 - 30.4 tATM5

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 913.1 | 215.0 | 4.25 |
| tATM5 | -30.40 | 12.92 | -2.35 |

s = 160.4 R-sq = 20.1% R-sq(adj) = 16.5%

Analysis of Variance

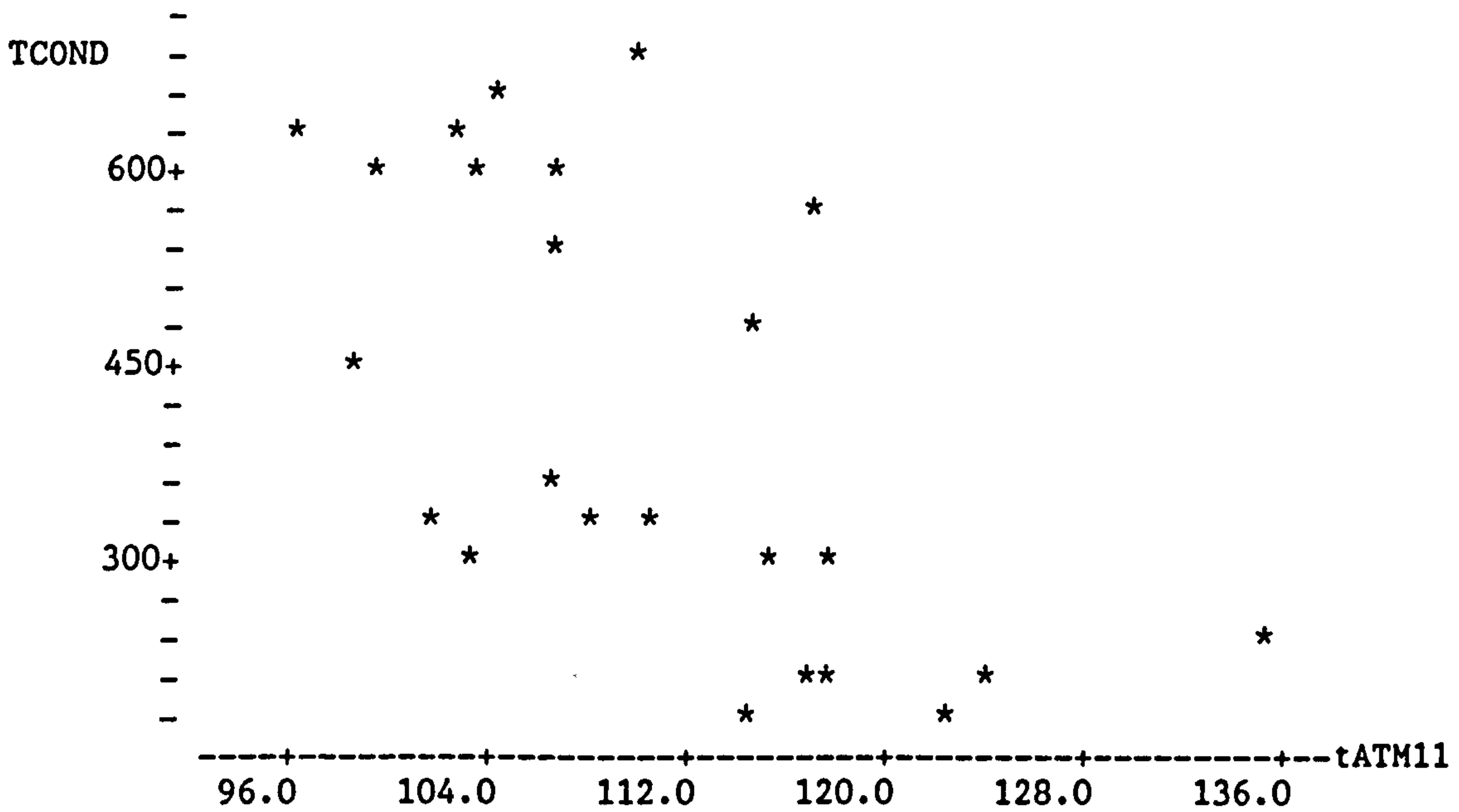
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 142358 | 142358 |
| Error | 22 | 565799 | 25718 |
| Total | 23 | 708157 | |

Unusual Observations

| Obs. | tATM5 | TCOND | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 23.4 | 211.0 | 203.0 | 95.1 | 8.0 | 0.06 X |
| 22 | 13.8 | 185.0 | 492.2 | 46.9 | -307.2 | -2.00R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C136 and C123 = -0.412



Correlation of TCOND and tATM11 = -0.625

The regression equation is
 TCOND = 1720 - 11.8 tATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | 1720.2 | 349.3 | 4.92 |
| tATM11 | -11.828 | 3.150 | -3.75 |

s = 140.1 R-sq = 39.1% R-sq(adj) = 36.3%

Analysis of Variance

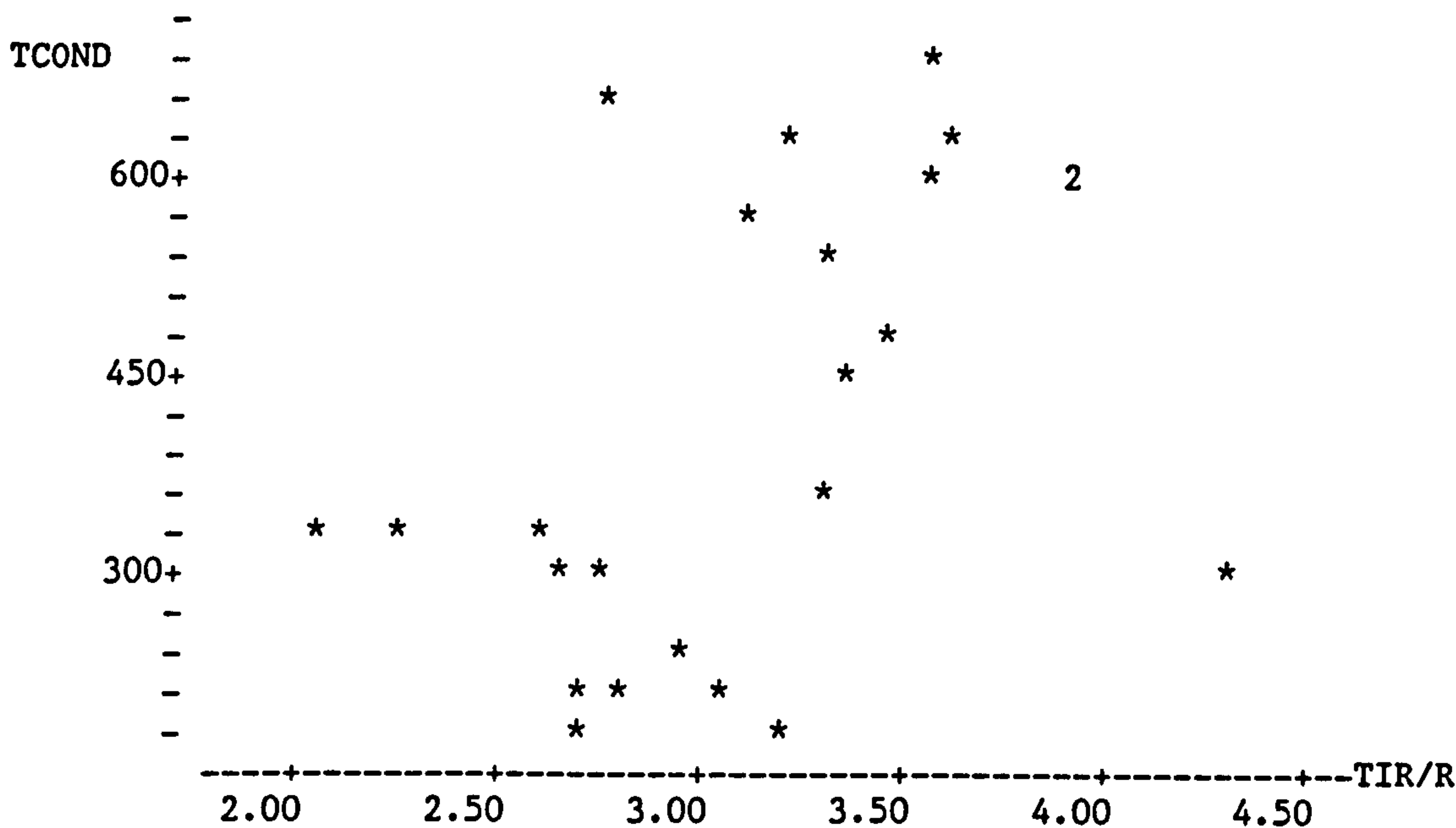
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 276584 | 276584 |
| Error | 22 | 431573 | 19617 |
| Total | 23 | 708157 | |

Unusual Observations

| Obs. | tATM11 | TCOND | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 20 | 135 | 228.0 | 120.4 | 83.0 | 107.6 | 0.95 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C136 and C129 = -0.671



Correlation of TCOND and TIR/R = 0.461

The regression equation is
 TCOND = - 61 + 152 TIR/R

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -60.8 | 197.2 | -0.31 |
| TIR/R | 151.82 | 62.32 | 2.44 |

s = 159.2 R-sq = 21.2% R-sq(adj) = 17.7%

Analysis of Variance

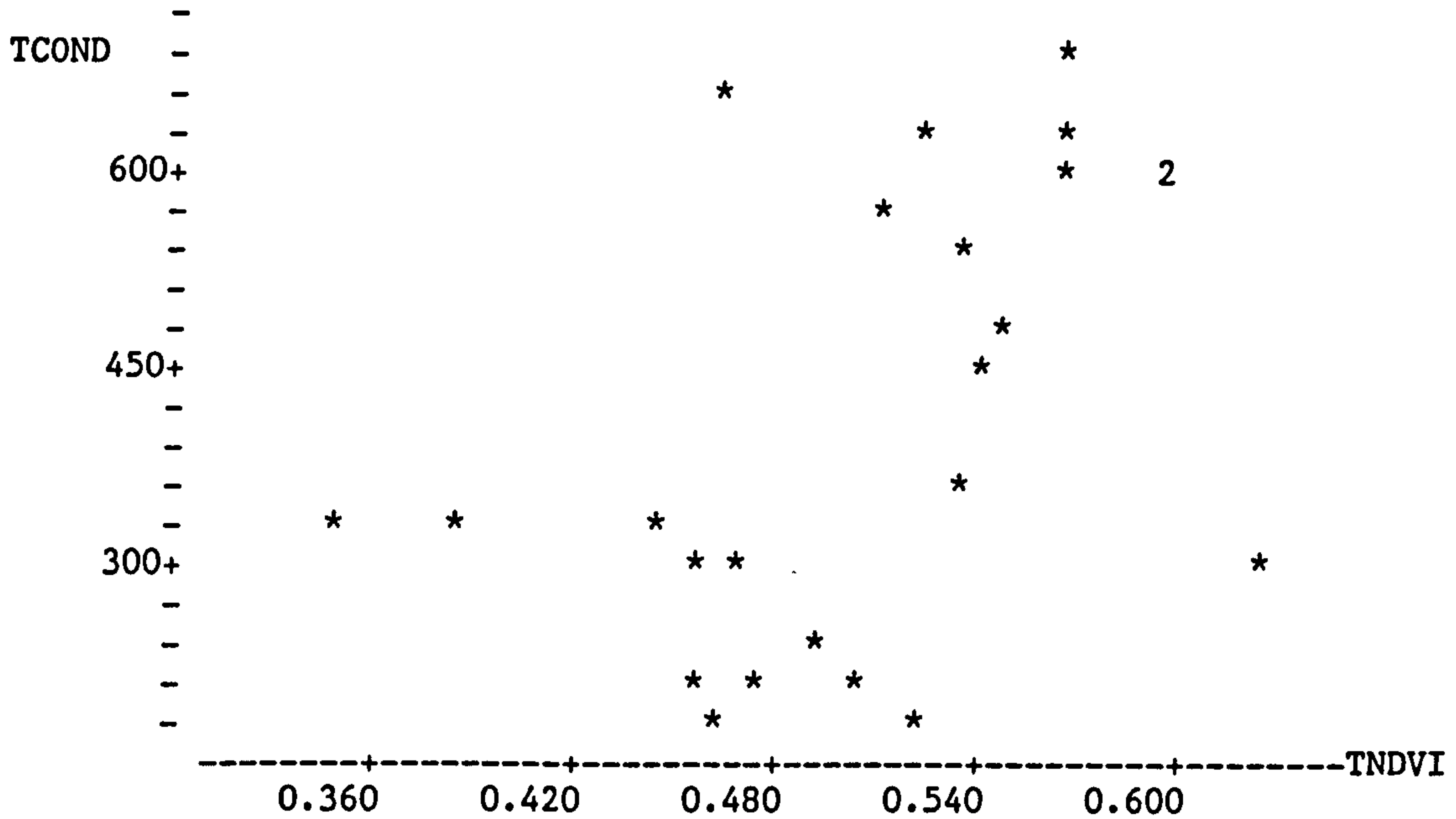
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 150430 | 150430 |
| Error | 22 | 557727 | 25351 |
| Total | 23 | 708157 | |

Unusual Observations

| Obs. | TIR/R | TCOND | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 24 | 4.31 | 291.0 | 593.1 | 80.8 | -302.1 | -2.20RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C136 and C151 = 0.471



Correlation of TCOND and TNDVI = 0.462

The regression equation is
 $TCOND = -220 + 1250 TNDVI$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -220.3 | 260.9 | -0.84 |
| TNDVI | 1249.6 | 510.8 | 2.45 |

s = 159.1 R-sq = 21.4% R-sq(adj) = 17.8%

Analysis of Variance

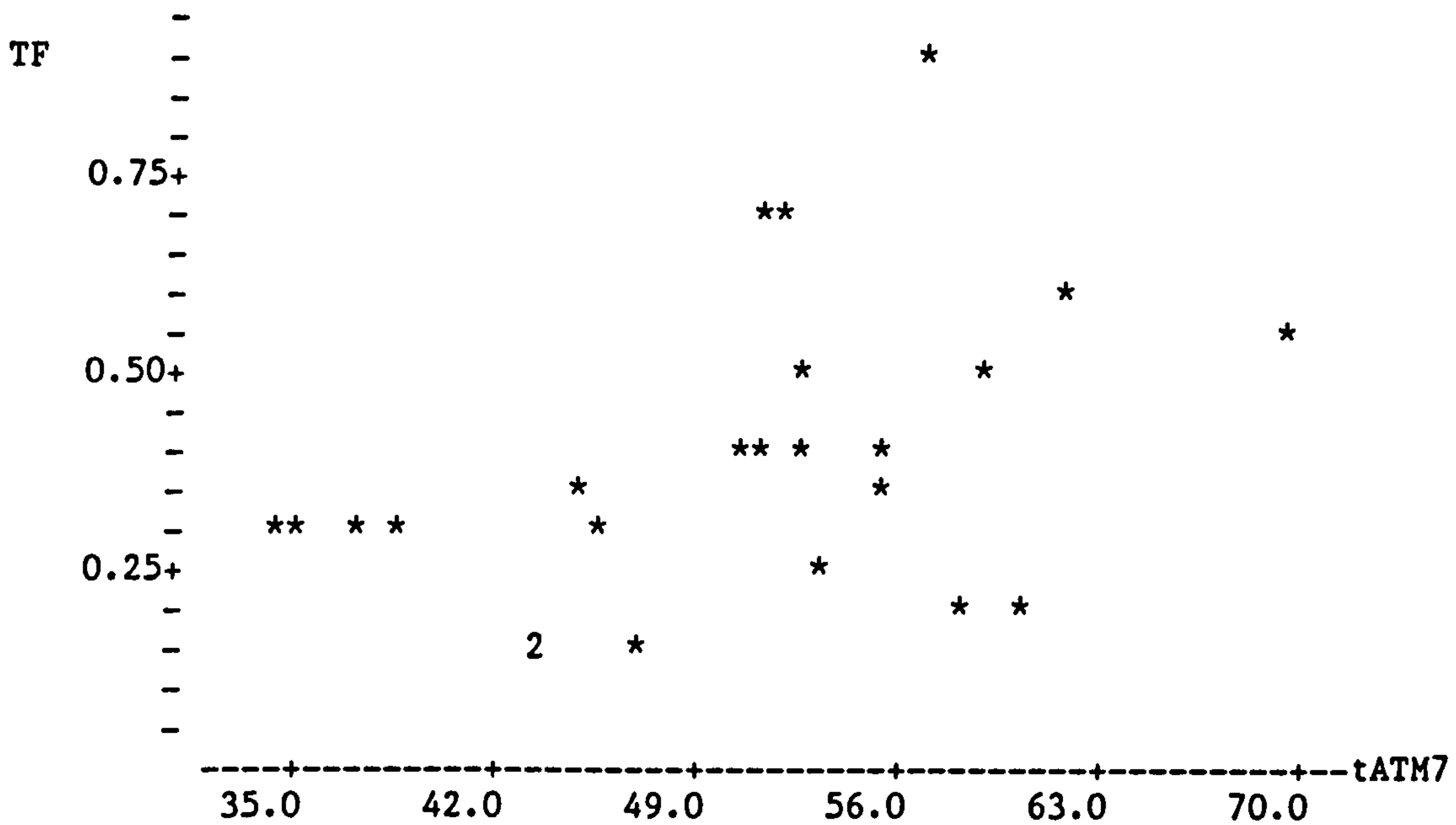
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 151450 | 151450 |
| Error | 22 | 556707 | 25305 |
| Total | 23 | 708157 | |

Unusual Observations

| Obs. | TNDVI | TCOND | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 1 | 0.349 | 326.0 | 215.4 | 87.1 | 110.6 | 0.83 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C136 and C153 = 0.471



Correlation of TF and tATM7 = 0.421

The regression equation is
 TF = - 0.065 + 0.00905 tATM7

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -0.0651 | 0.2123 | -0.31 |
| tATM7 | 0.009054 | 0.004154 | 2.18 |

s = 0.1772 R-sq = 17.8% R-sq(adj) = 14.0%

Analysis of Variance

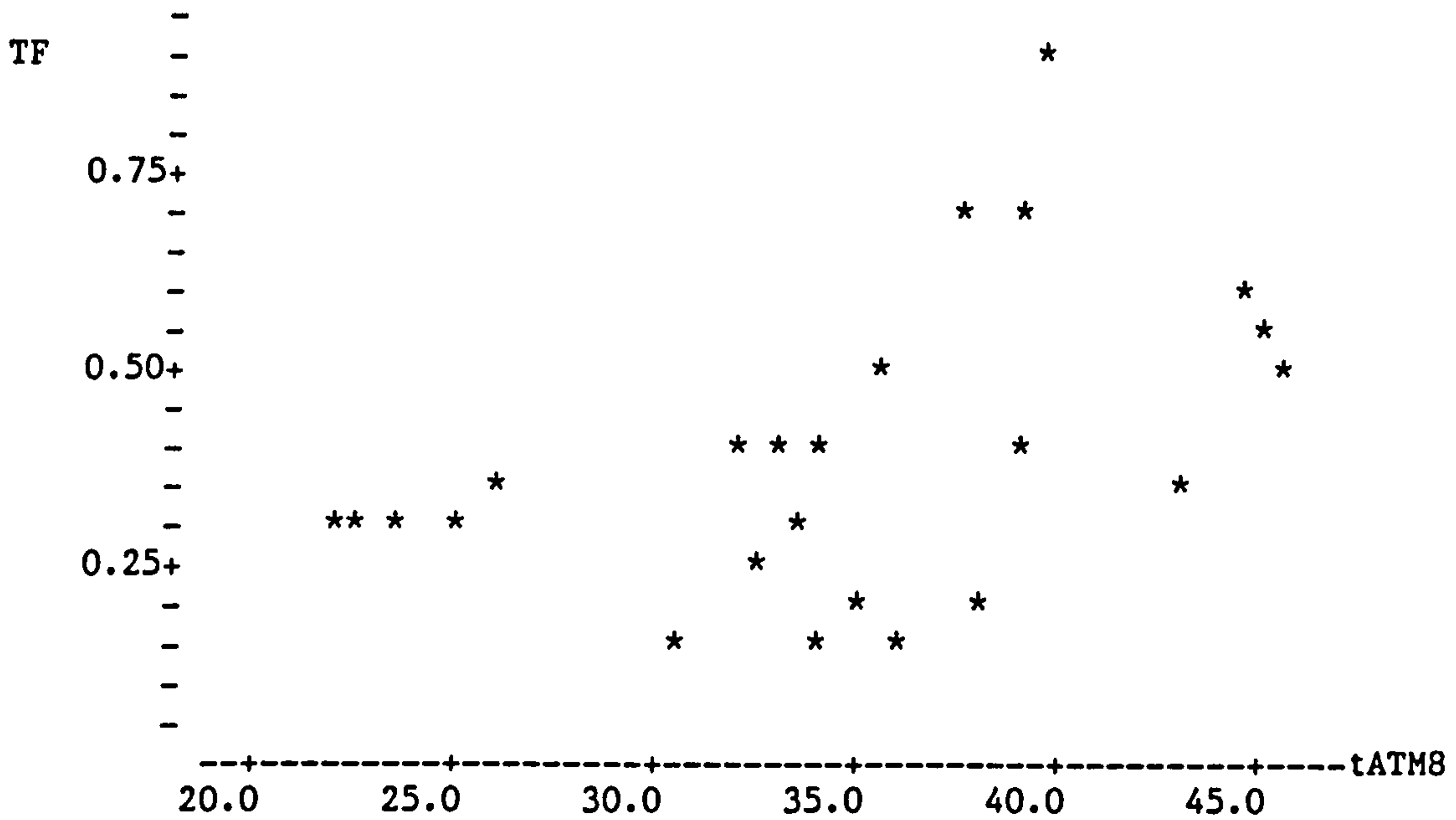
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.14916 | 0.14916 |
| Error | 22 | 0.69083 | 0.03140 |
| Total | 23 | 0.83998 | |

Unusual Observations

| Obs. | tATM7 | TF | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 15 | 56.4 | 0.9000 | 0.4459 | 0.0441 | 0.4541 | 2.65R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C138 and C125 = 0.437



Correlation of TF and tATM8 = 0.462

The regression equation is
 $TF = -0.044 + 0.0126 tATM8$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -0.0437 | 0.1814 | -0.24 |
| tATM8 | 0.012627 | 0.005170 | 2.44 |

s = 0.1733 R-sq = 21.3% R-sq(adj) = 17.8%

Analysis of Variance

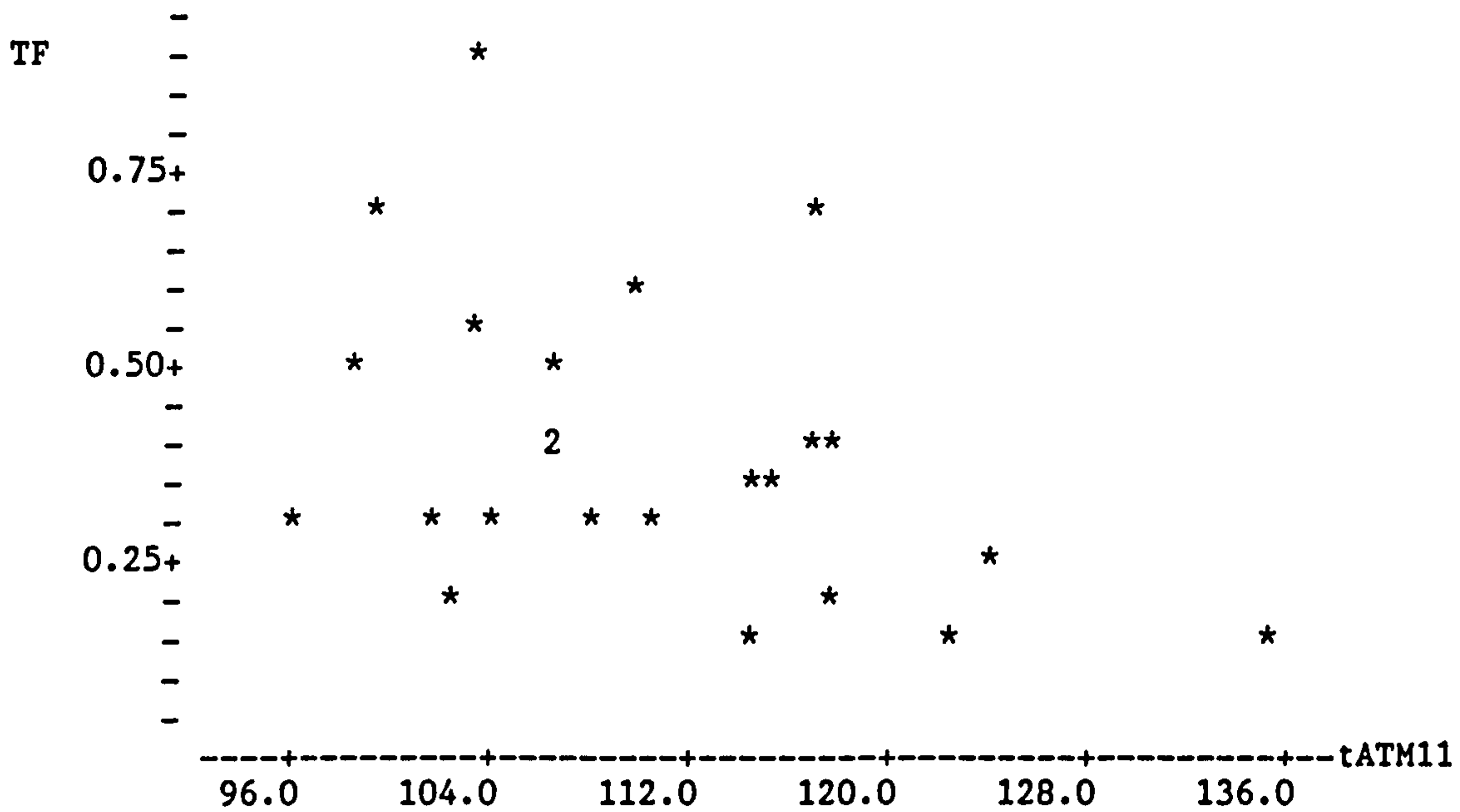
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.17915 | 0.17915 |
| Error | 22 | 0.66083 | 0.03004 |
| Total | 23 | 0.83998 | |

Unusual Observations

| Obs. | tATM8 | TF | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 15 | 39.4 | 0.9000 | 0.4535 | 0.0437 | 0.4465 | 2.66R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C138 and C126 = 0.519



Correlation of TF and tATM11 = -0.406

The regression equation is
 TF = 1.32 - 0.00838 tATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 1.3167 | 0.4452 | 2.96 |
| tATM11 | -0.008378 | 0.004015 | -2.09 |

s = 0.1785 R-sq = 16.5% R-sq(adj) = 12.7%

Analysis of Variance

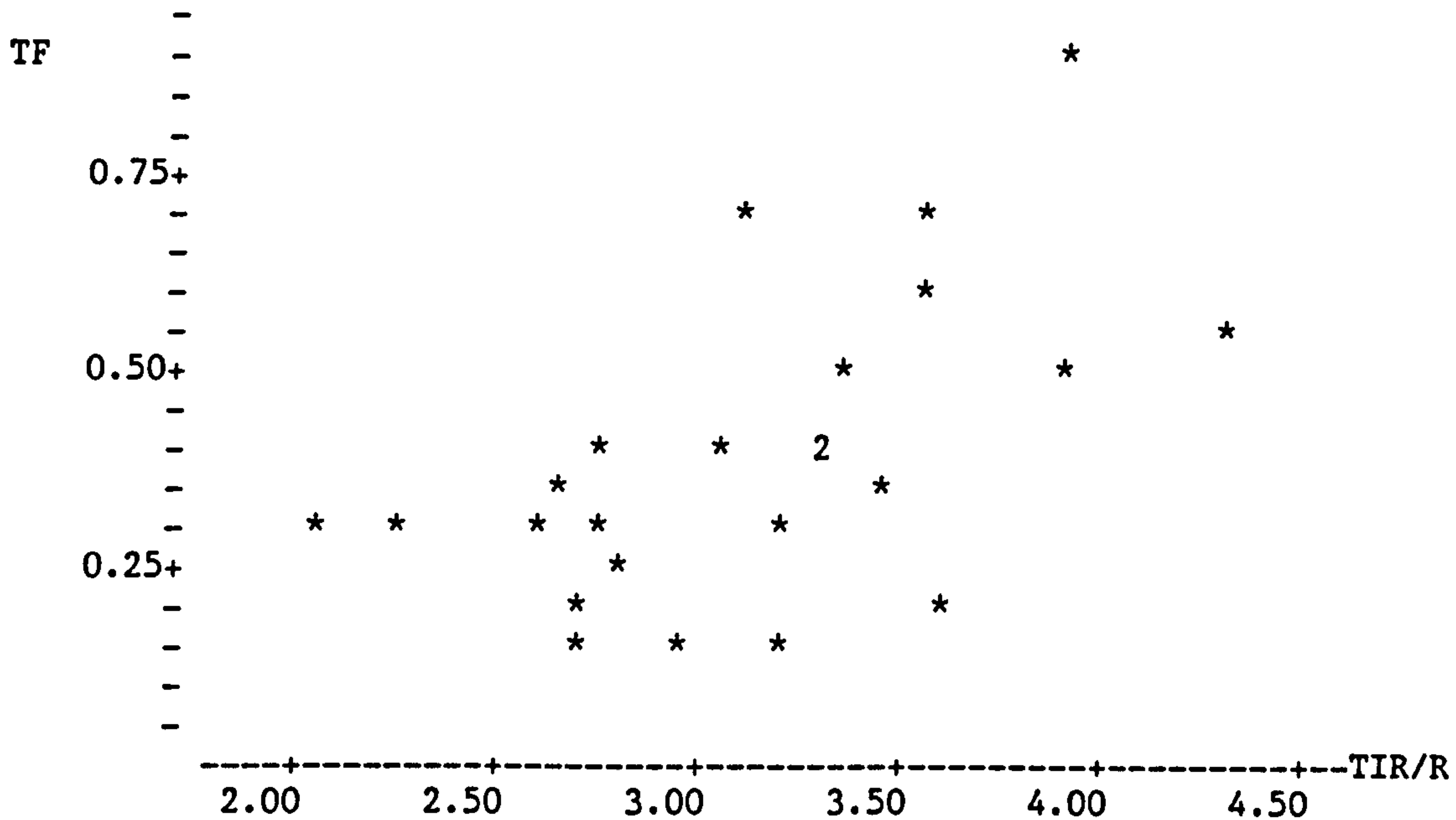
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.13876 | 0.13876 |
| Error | 22 | 0.70122 | 0.03187 |
| Total | 23 | 0.83998 | |

Unusual Observations

| Obs. | tATM11 | TF | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|--------|-----------|----------|----------|
| 15 | 104 | 0.9000 | 0.4496 | 0.0460 | 0.4504 | 2.61R |
| 17 | 117 | 0.7000 | 0.3407 | 0.0437 | 0.3593 | 2.08R |
| 20 | 135 | 0.1600 | 0.1836 | 0.1058 | -0.0236 | -0.16 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C138 and C129 = -0.364



Correlation of TF and TIR/R = 0.562

The regression equation is
 $TF = -0.239 + 0.202 \text{ TIR/R}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -0.2386 | 0.2002 | -1.19 |
| TIR/R | 0.20166 | 0.06326 | 3.19 |

$s = 0.1616$ $R\text{-sq} = 31.6\%$ $R\text{-sq(adj)} = 28.5\%$

Analysis of Variance

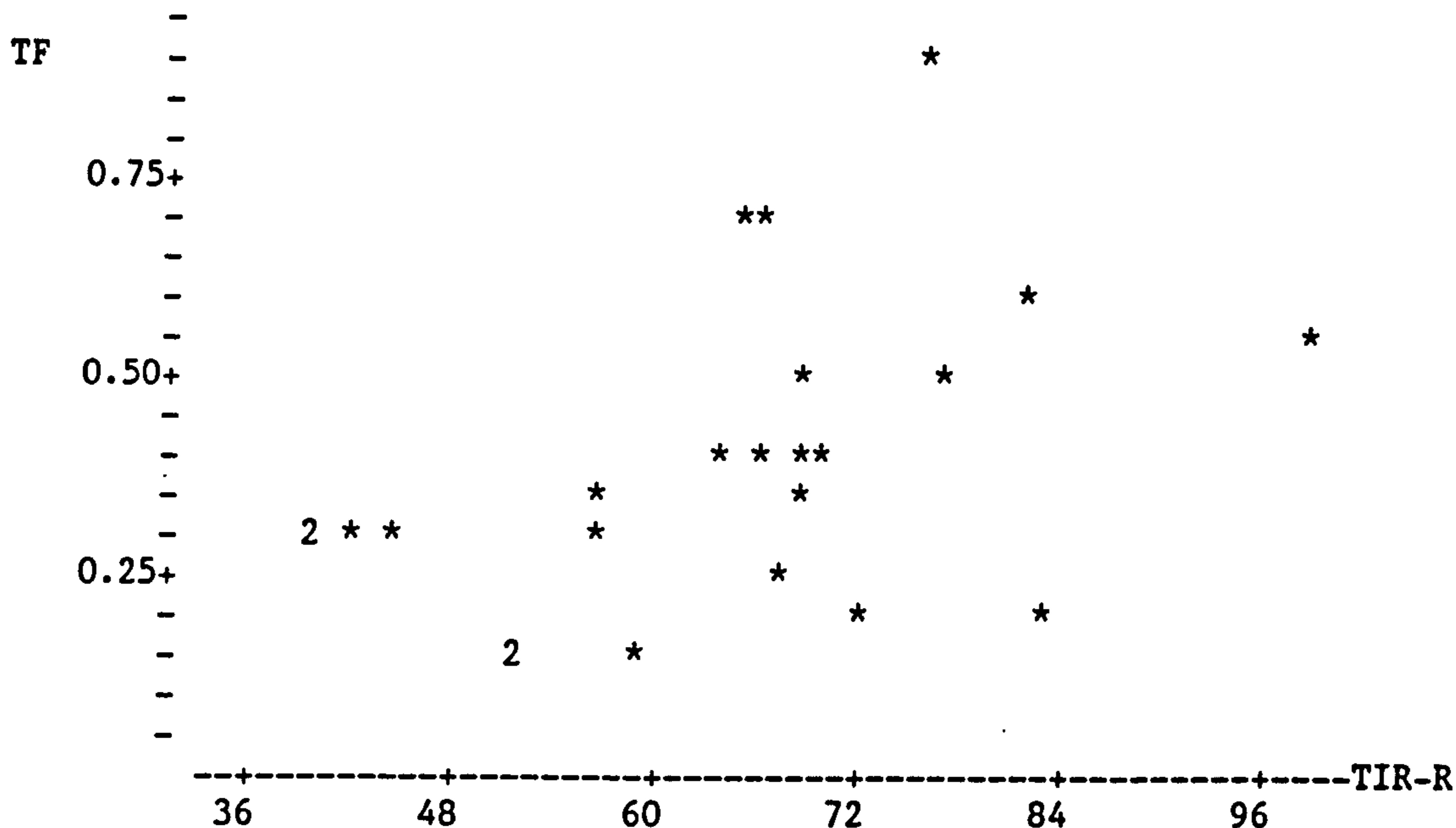
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.26542 | 0.26542 |
| Error | 22 | 0.57456 | 0.02612 |
| Total | 23 | 0.83998 | |

Unusual Observations

| Obs. | TIR/R | TF | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 15 | 3.92 | 0.9000 | 0.5511 | 0.0601 | 0.3489 | 2.33R |
| 17 | 3.08 | 0.7000 | 0.3816 | 0.0331 | 0.3184 | 2.01R |
| 24 | 4.31 | 0.5500 | 0.6300 | 0.0820 | -0.0800 | -0.57 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C138 and C151 = 0.550



Correlation of TF and TIR-R = 0.446

The regression equation is
 $TF = 0.016 + 0.00588 \text{ TIR-R}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | 0.0162 | 0.1644 | 0.10 |
| TIR-R | 0.005883 | 0.002519 | 2.33 |

$s = 0.1749$ $R\text{-sq} = 19.9\%$ $R\text{-sq(adj)} = 16.2\%$

Analysis of Variance

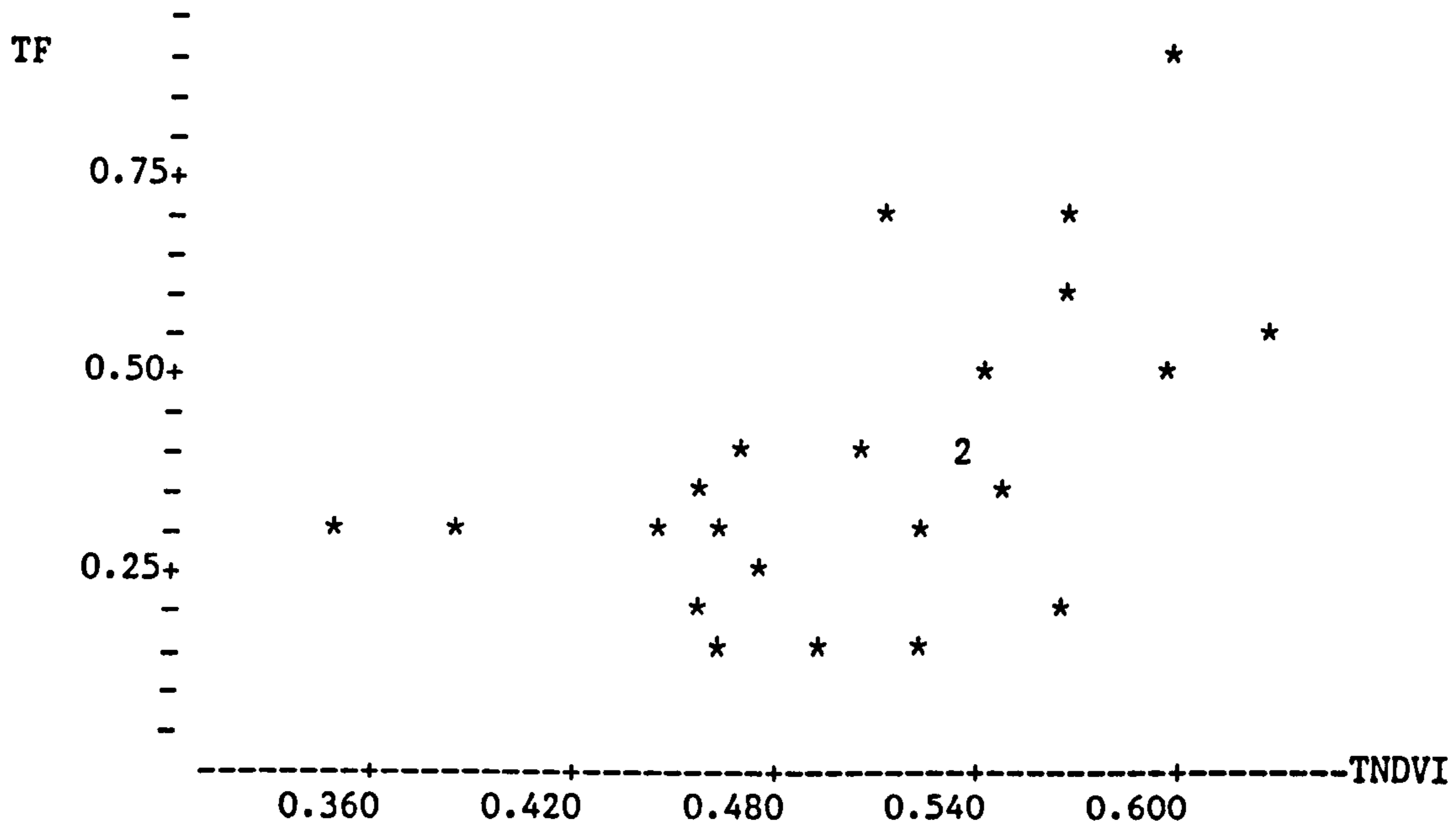
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.16682 | 0.16682 |
| Error | 22 | 0.67316 | 0.03060 |
| Total | 23 | 0.83998 | |

Unusual Observations

| Obs. | TIR-R | TF | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 15 | 76.0 | 0.9000 | 0.4631 | 0.0472 | 0.4369 | 2.59R |
| 24 | 97.8 | 0.5500 | 0.5918 | 0.0932 | -0.0418 | -0.28 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C138 and C152 = 0.448



Correlation of TF and TNDVI = 0.525

The regression equation is
 $TF = -0.392 + 1.54 \text{ TNDVI}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | -0.3915 | 0.2728 | -1.43 |
| TNDVI | 1.5437 | 0.5342 | 2.89 |

$s = 0.1664$ $R\text{-sq} = 27.5\%$ $R\text{-sq(adj)} = 24.2\%$

Analysis of Variance

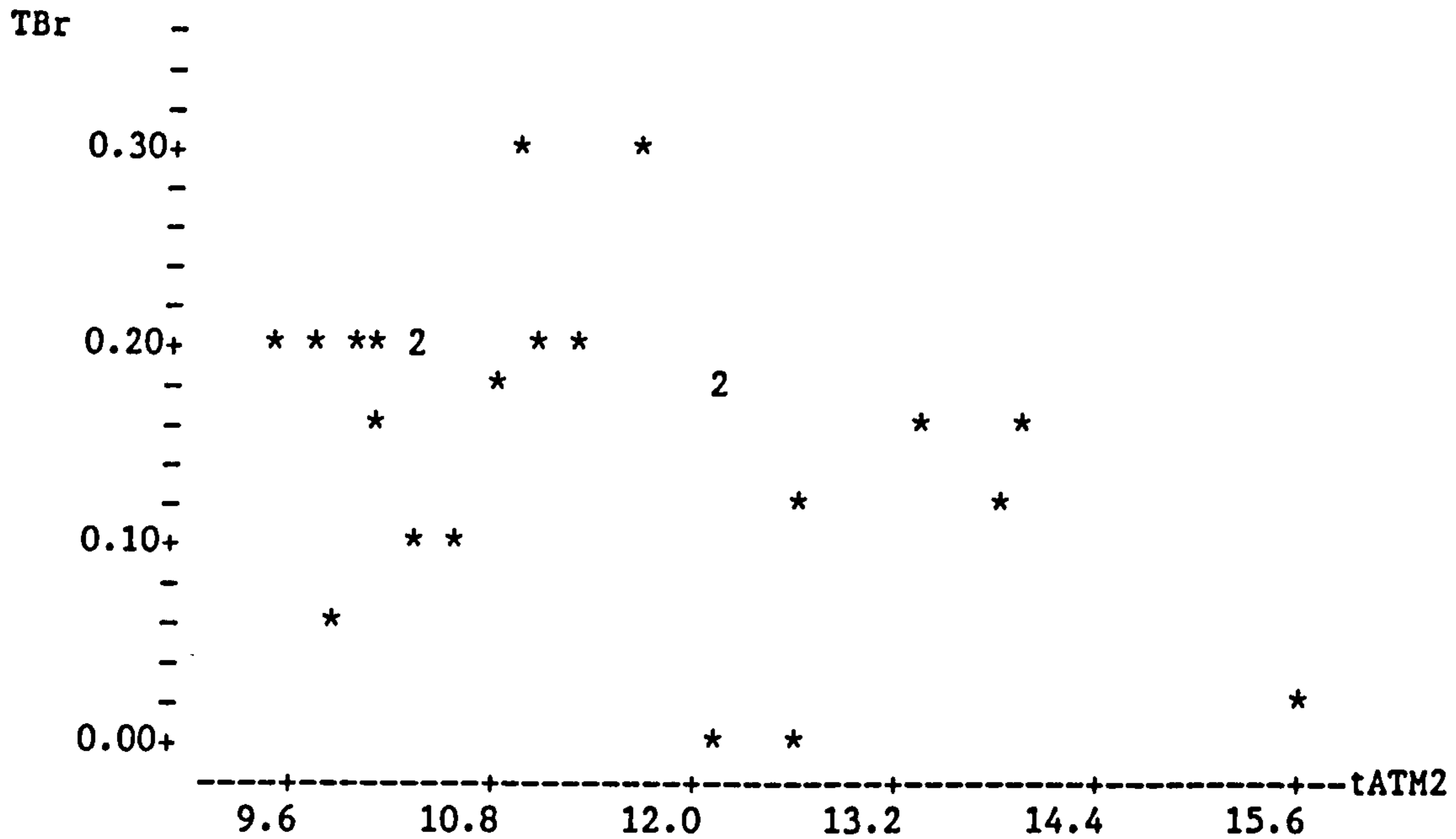
| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 1 | 0.23113 | 0.23113 |
| Error | 22 | 0.60885 | 0.02768 |
| Total | 23 | 0.83998 | |

Unusual Observations

| Obs. | TNDVI | TF | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 1 | 0.349 | 0.3000 | 0.1467 | 0.0911 | 0.1533 | 1.10 X |
| 15 | 0.593 | 0.9000 | 0.5242 | 0.0573 | 0.3758 | 2.41R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C138 and C153 = 0.550



Correlation of TBr and tATM2 = -0.418

The regression equation is
 TBr = 0.398 - 0.0212 tATM2

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 0.3982 | 0.1136 | 3.51 |
| tATM2 | -0.021242 | 0.009830 | -2.16 |

s = 0.07444 R-sq = 17.5% R-sq(adj) = 13.8%

Analysis of Variance

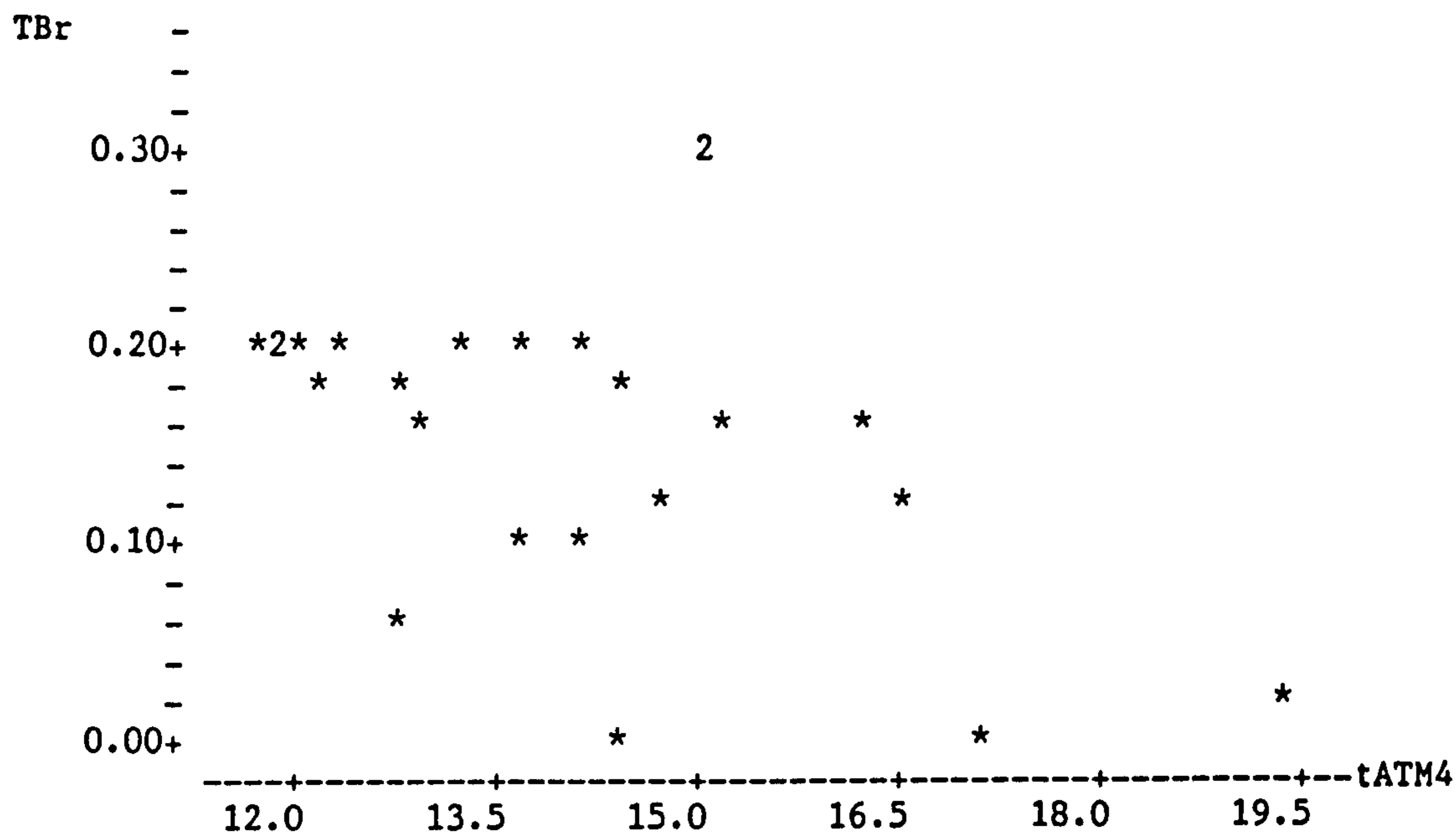
| SOURCE | DF | SS | MS |
|------------|----|----------|----------|
| Regression | 1 | 0.025879 | 0.025879 |
| Error | 22 | 0.121921 | 0.005542 |
| Total | 23 | 0.147800 | |

Unusual Observations

| Obs. | tATM2 | TBr | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 6 | 15.6 | 0.0100 | 0.0667 | 0.0436 | -0.0567 | -0.94 X |
| 18 | 11.6 | 0.3000 | 0.1509 | 0.0153 | 0.1491 | 2.05R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C139 and C120 = -0.416



Correlation of TBr and tATM4 = -0.470

The regression equation is
 TBr = 0.434 - 0.0199 tATM4

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 0.4344 | 0.1128 | 3.85 |
| tATM4 | -0.019911 | 0.007970 | -2.50 |

s = 0.07234 R-sq = 22.1% R-sq(adj) = 18.6%

Analysis of Variance

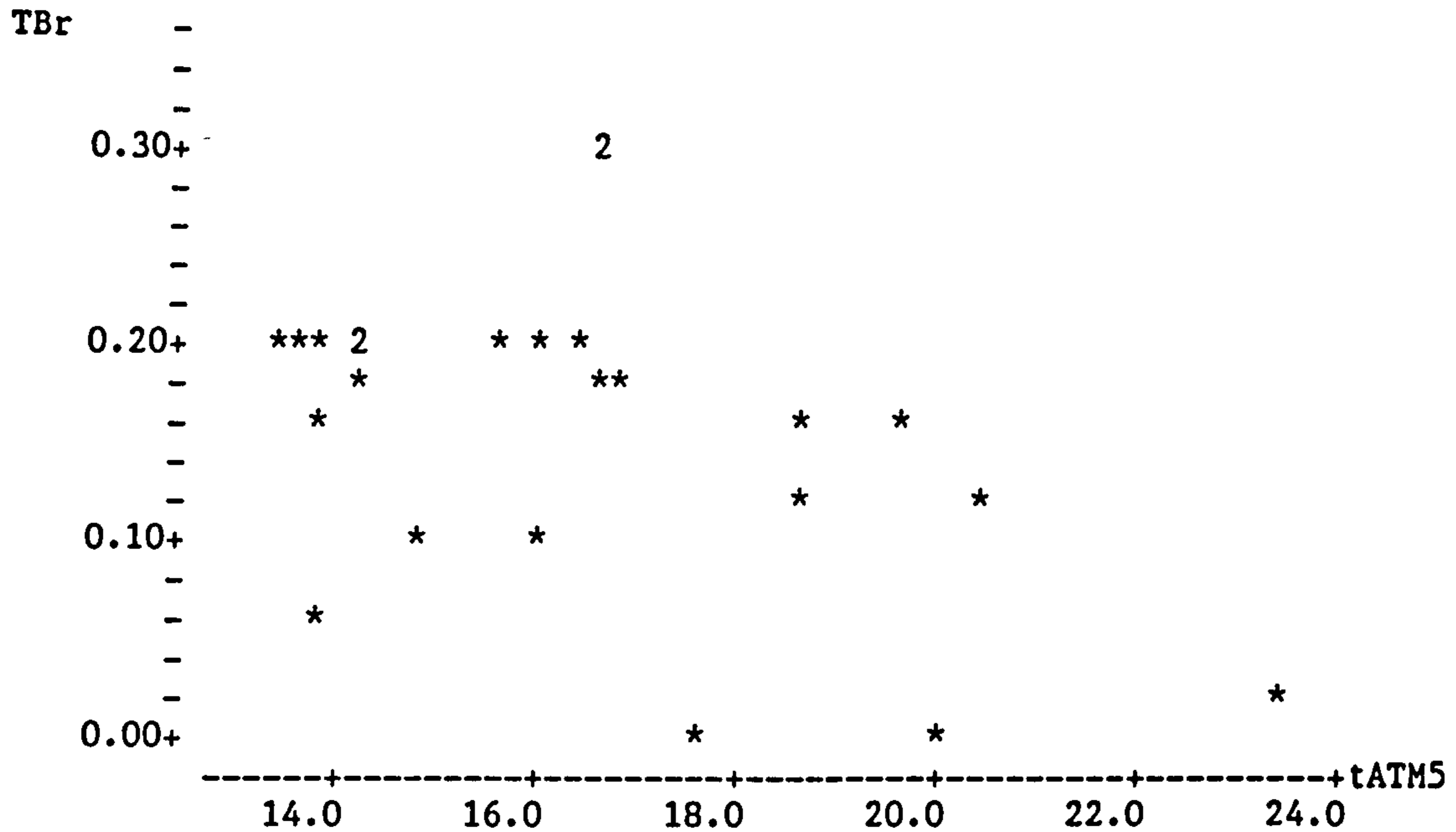
| SOURCE | DF | SS | MS |
|------------|----|----------|----------|
| Regression | 1 | 0.032661 | 0.032661 |
| Error | 22 | 0.115139 | 0.005234 |
| Total | 23 | 0.147800 | |

Unusual Observations

| Obs. | tATM4 | TBr | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 6 | 19.3 | 0.0100 | 0.0502 | 0.0445 | -0.0402 | -0.70 X |
| 9 | 14.4 | 0.0000 | 0.1483 | 0.0150 | -0.1483 | -2.10R |
| 17 | 15.0 | 0.3000 | 0.1365 | 0.0165 | 0.1635 | 2.32R |
| 18 | 15.0 | 0.3000 | 0.1365 | 0.0165 | 0.1635 | 2.32R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C139 and C122 = -0.439



Correlation of TBr and tATM5 = -0.472

The regression equation is
 TBr = 0.395 - 0.0146 tATM5

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 0.39533 | 0.09691 | 4.08 |
| tATM5 | -0.014612 | 0.005824 | -2.51 |

s = 0.07227 R-sq = 22.2% R-sq(adj) = 18.7%

Analysis of Variance

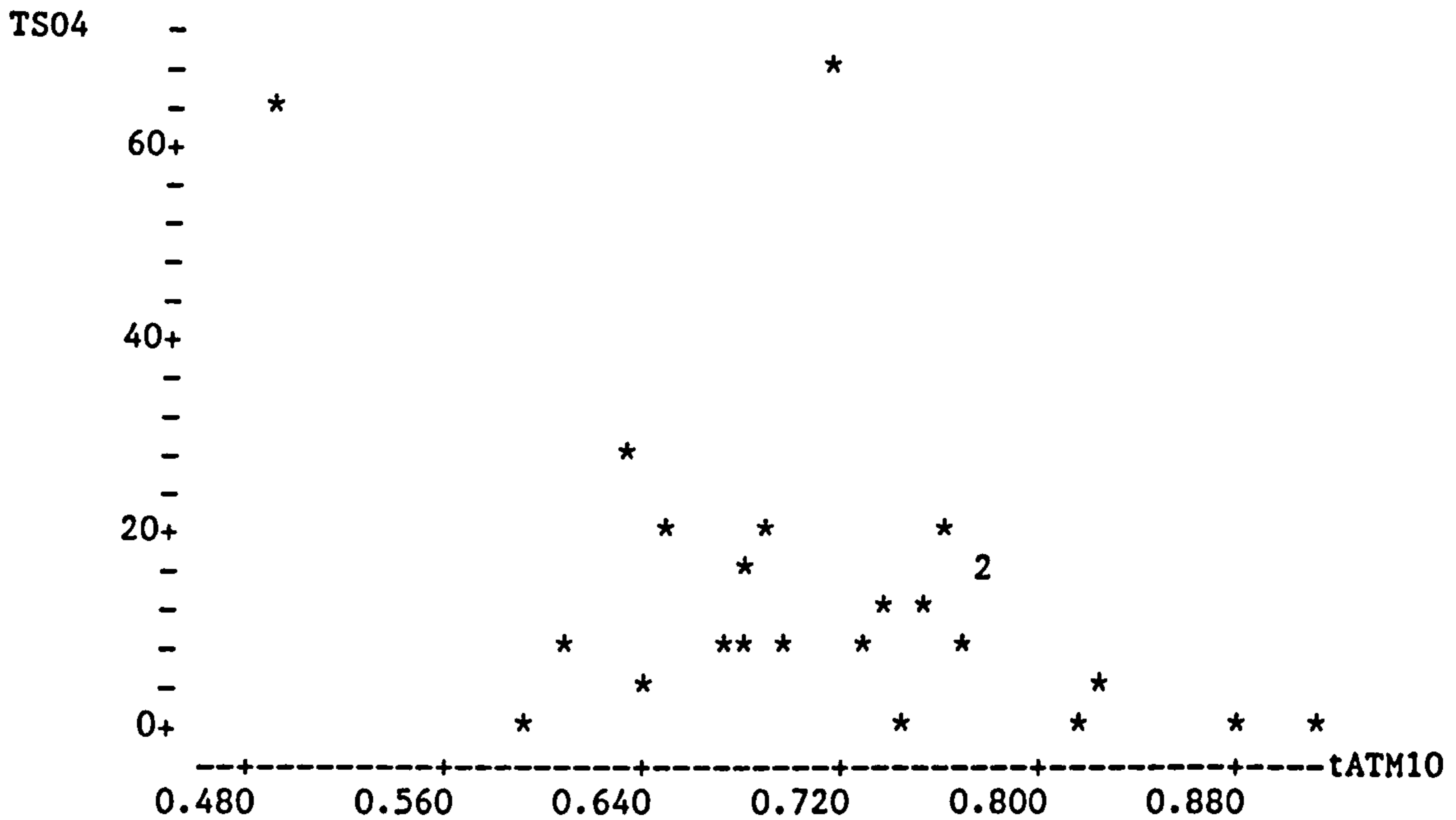
| SOURCE | DF | SS | MS |
|------------|----|----------|----------|
| Regression | 1 | 0.032884 | 0.032884 |
| Error | 22 | 0.114916 | 0.005223 |
| Total | 23 | 0.147800 | |

Unusual Observations

| Obs. | tATM5 | TBr | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 6 | 23.4 | 0.0100 | 0.0541 | 0.0428 | -0.0441 | -0.76 X |
| 17 | 16.6 | 0.3000 | 0.1529 | 0.0148 | 0.1471 | 2.08R |
| 18 | 16.7 | 0.3000 | 0.1515 | 0.0148 | 0.1485 | 2.10R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C139 and C123 = -0.452



Correlation of TS04 and tATM10 = -0.470

The regression equation is
 TS04 = 76.4 - 85.9 tATM10

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 76.35 | 24.84 | 3.07 |
| tATM10 | -85.93 | 34.37 | -2.50 |

s = 15.55 R-sq = 22.1% R-sq(adj) = 18.6%

Analysis of Variance

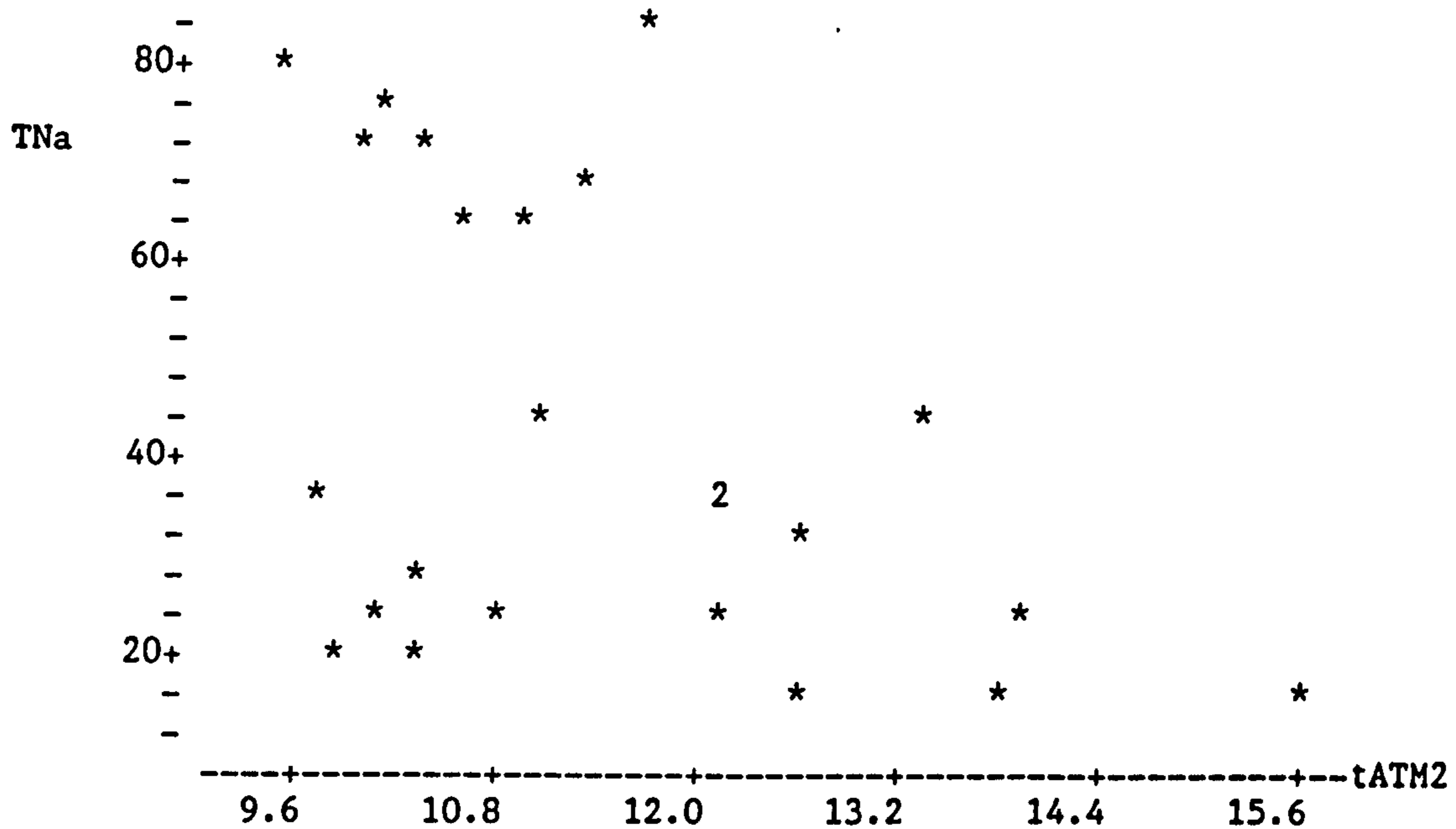
| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 1511.5 | 1511.5 |
| Error | 22 | 5320.7 | 241.8 |
| Total | 23 | 6832.2 | |

Unusual Observations

| Obs. | tATM10 | TS04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 9 | 0.708 | 67.20 | 15.47 | 3.19 | 51.73 | 3.40R |
| 10 | 0.484 | 62.30 | 34.72 | 8.59 | 27.58 | 2.13RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C140 and C128 = -0.353



Correlation of TNa and tATM2 = -0.443

The regression equation is
 TNa = 117 - 6.50 tATM2

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 116.73 | 32.38 | 3.61 |
| tATM2 | -6.503 | 2.803 | -2.32 |

s = 21.23 R-sq = 19.7% R-sq(adj) = 16.0%

Analysis of Variance

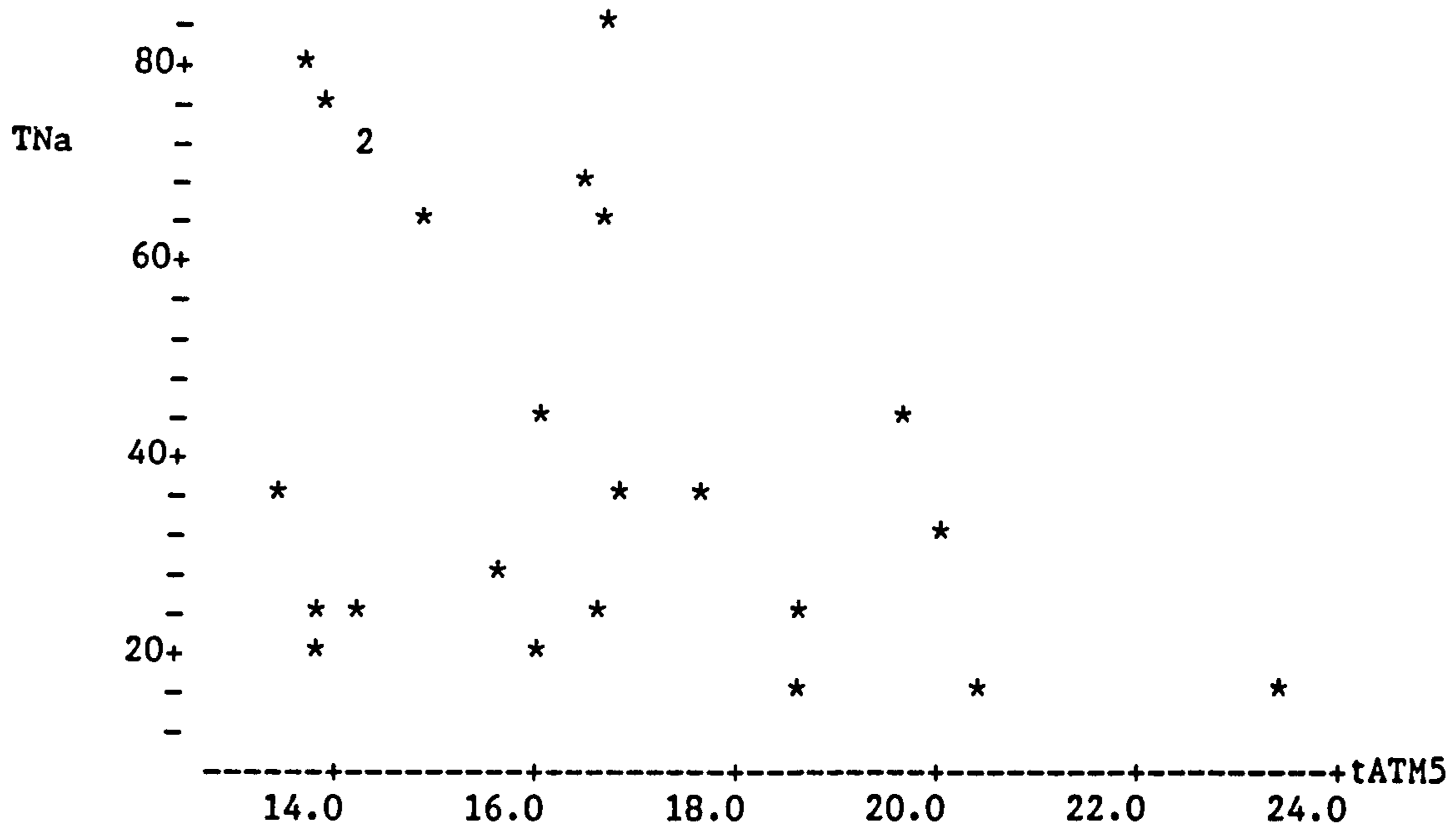
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 2425.2 | 2425.2 |
| Error | 22 | 9913.8 | 450.6 |
| Total | 23 | 12339.0 | |

Unusual Observations

| Obs. | tATM2 | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 15.6 | 17.00 | 15.26 | 12.43 | 1.74 | 0.10 X |
| 18 | 11.6 | 84.00 | 41.04 | 4.37 | 42.96 | 2.07R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C141 and C120 = -0.399



Correlation of TNa and tATM5 = -0.425

The regression equation is
 $TNa = 105 - 3.81 tATM5$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 104.88 | 28.74 | 3.65 |
| tATM5 | -3.805 | 1.727 | -2.20 |

s = 21.44 R-sq = 18.1% R-sq(adj) = 14.3%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 2230.0 | 2230.0 |
| Error | 22 | 10108.9 | 459.5 |
| Total | 23 | 12339.0 | |

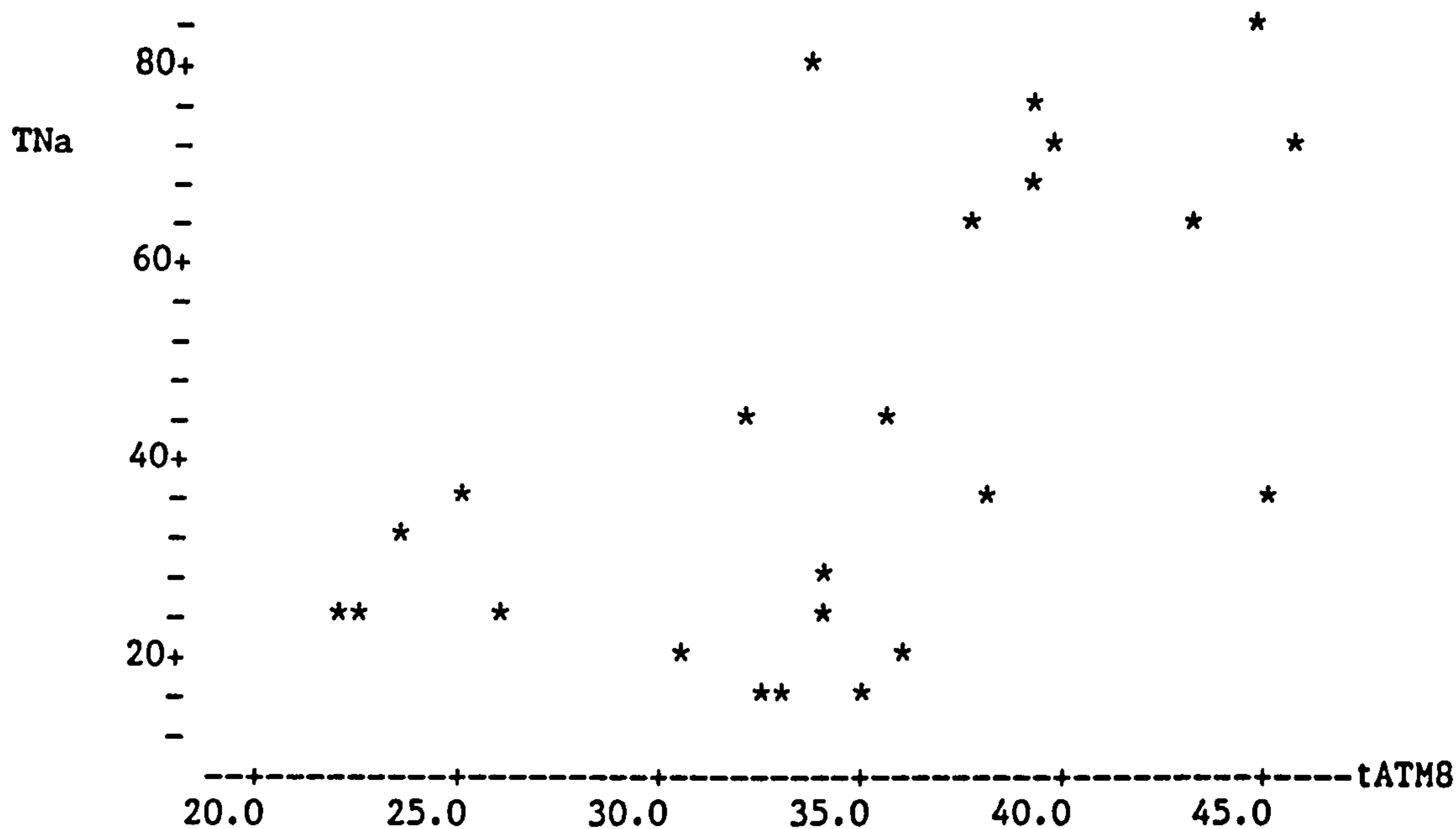
Unusual Observations

| Obs. | tATM5 | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 23.4 | 17.00 | 16.01 | 12.71 | 0.99 | 0.06 X |
| 18 | 16.7 | 84.00 | 41.37 | 4.40 | 42.63 | 2.03R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C141 and C123 = -0.405



Correlation of TNa and tATM8 = 0.581

The regression equation is
 $TNa = -24.0 + 1.93 tATM8$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -24.02 | 20.17 | -1.19 |
| tATM8 | 1.9269 | 0.5748 | 3.35 |

s = 19.27 R-sq = 33.8% R-sq(adj) = 30.8%

Analysis of Variance

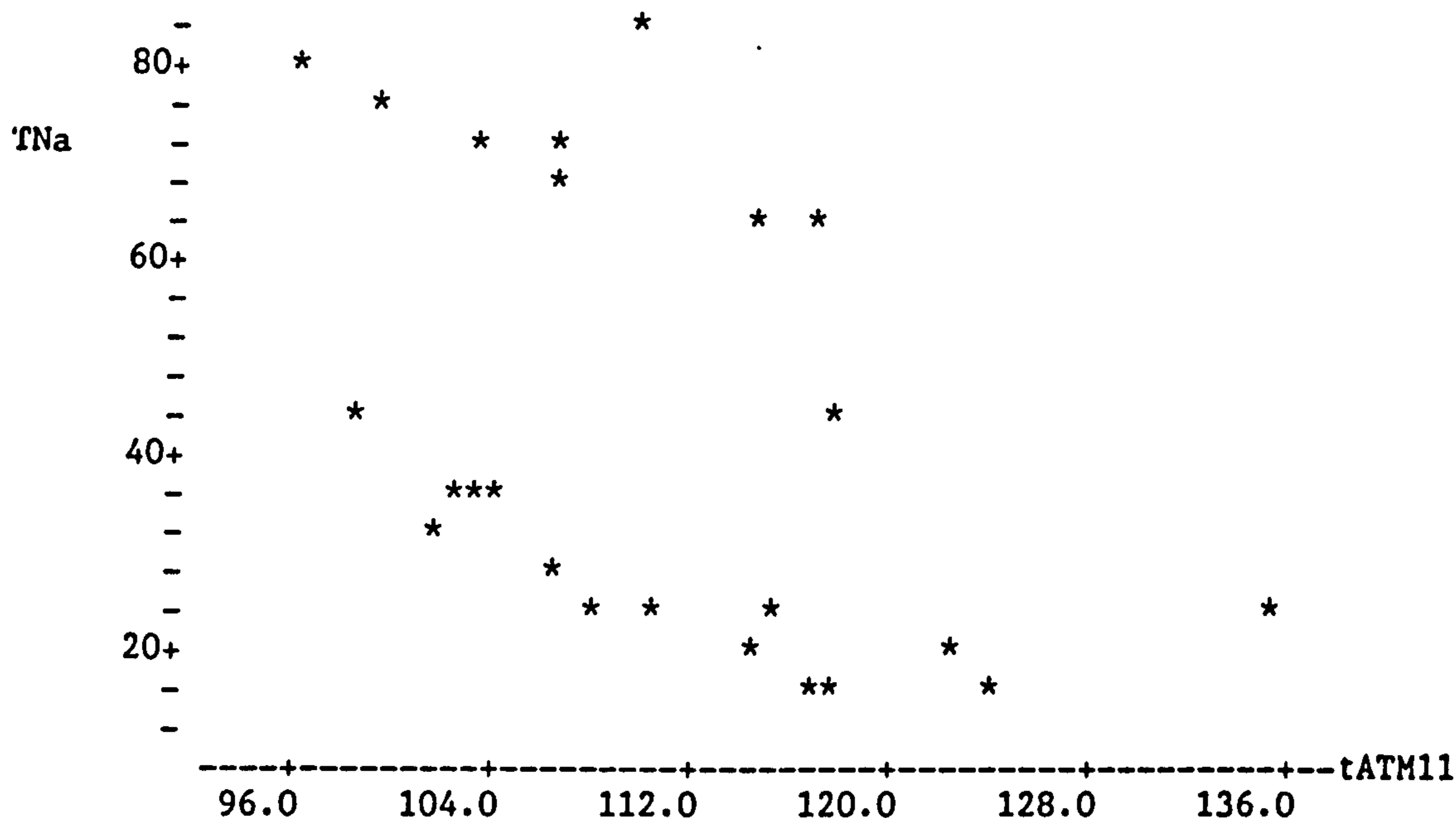
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 4171.9 | 4171.9 |
| Error | 22 | 8167.1 | 371.2 |
| Total | 23 | 12339.0 | |

Unusual Observations

| Obs. | tATM8 | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 13 | 33.7 | 81.00 | 40.91 | 3.95 | 40.09 | 2.13R |

R denotes an obs. with a large st. resid.

SPEARMAN RANK Correlation of C141 and C126 = 0.570



Correlation of TNa and tATM1 = -0.499

The regression equation is
 $TNa = 180 - 1.25 tATM1$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 180.07 | 51.18 | 3.52 |
| tATM1 | -1.2468 | 0.4616 | -2.70 |

s = 20.52 R-sq = 24.9% R-sq(adj) = 21.5%

Analysis of Variance

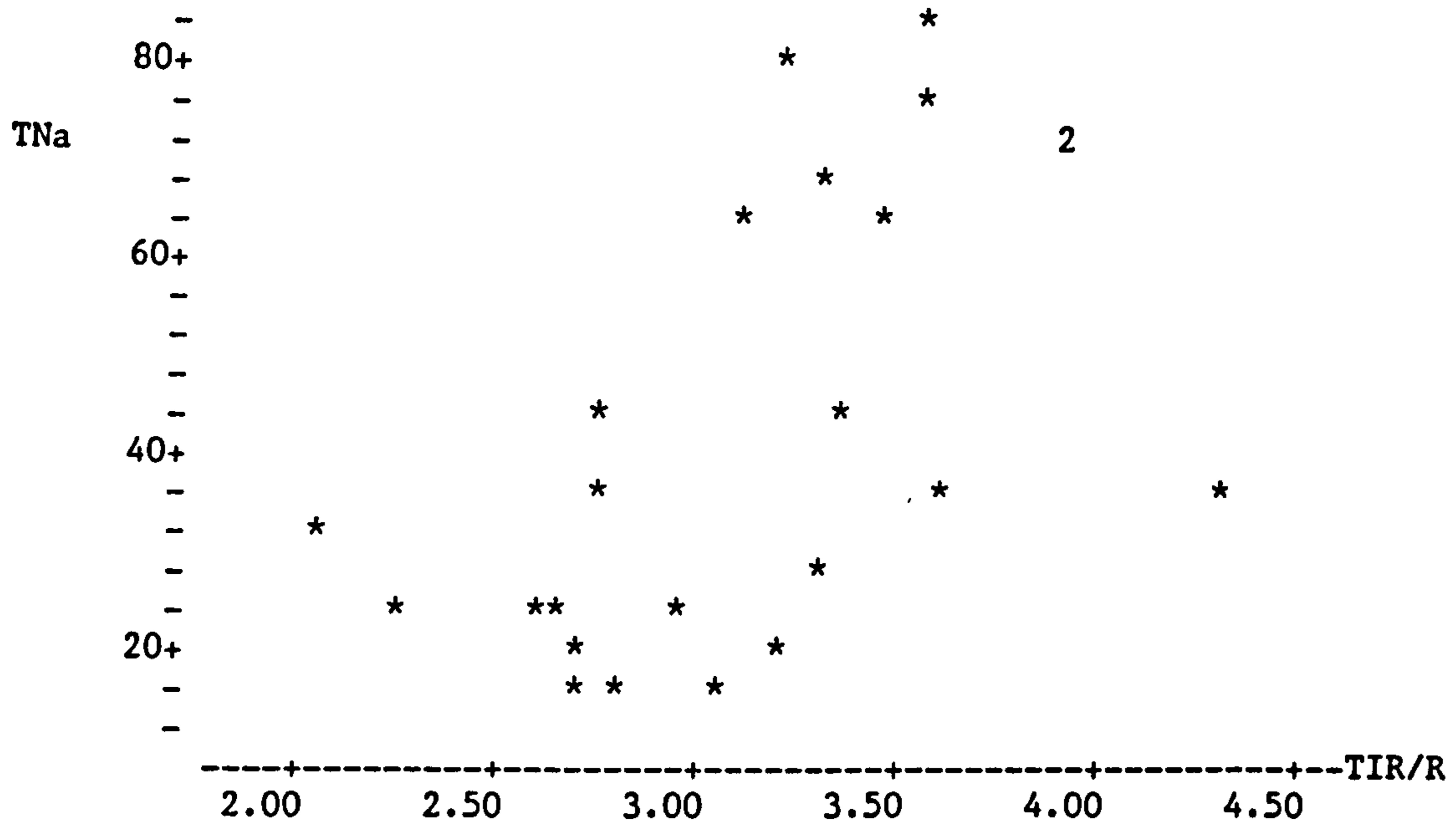
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 3073.1 | 3073.1 |
| Error | 22 | 9265.8 | 421.2 |
| Total | 23 | 12339.0 | |

Unusual Observations

| Obs. | tATM1 | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 18 | 110 | 84.00 | 43.55 | 4.22 | 40.45 | 2.01R |
| 20 | 135 | 24.00 | 11.45 | 12.16 | 12.55 | 0.76 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C141 and C129 = -0.616



Correlation of TNa and TIR/R = 0.542

The regression equation is
 $TNa = -31.2 + 23.5 \text{ TIR/R}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -31.22 | 24.66 | -1.27 |
| TIR/R | 23.549 | 7.793 | 3.02 |

s = 19.91 R-sq = 29.3% R-sq(adj) = 26.1%

Analysis of Variance

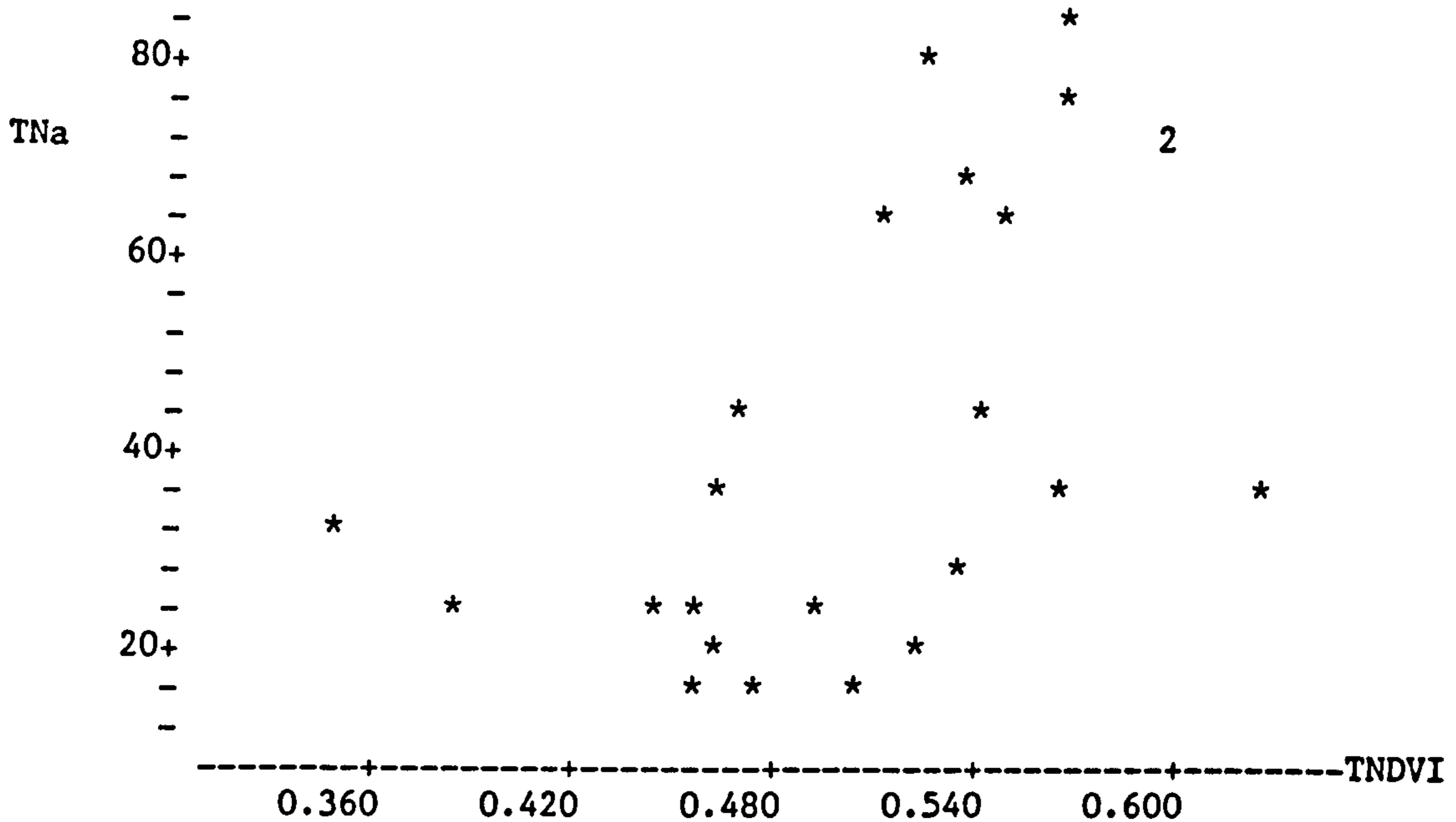
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 3619.5 | 3619.5 |
| Error | 22 | 8719.5 | 396.3 |
| Total | 23 | 12339.0 | |

Unusual Observations

| Obs. | TIR/R | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 24 | 4.31 | 36.00 | 70.23 | 10.10 | -34.23 | -1.99 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C141 and C151 = 0.612



Correlation of TNa and TNDVI = 0.536

The regression equation is
 $TNa = -54.6 + 191 \text{ TNDVI}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -54.64 | 32.78 | -1.67 |
| TNDVI | 191.26 | 64.19 | 2.98 |

$s = 19.99$ $R\text{-sq} = 28.8\%$ $R\text{-sq(adj)} = 25.5\%$

Analysis of Variance

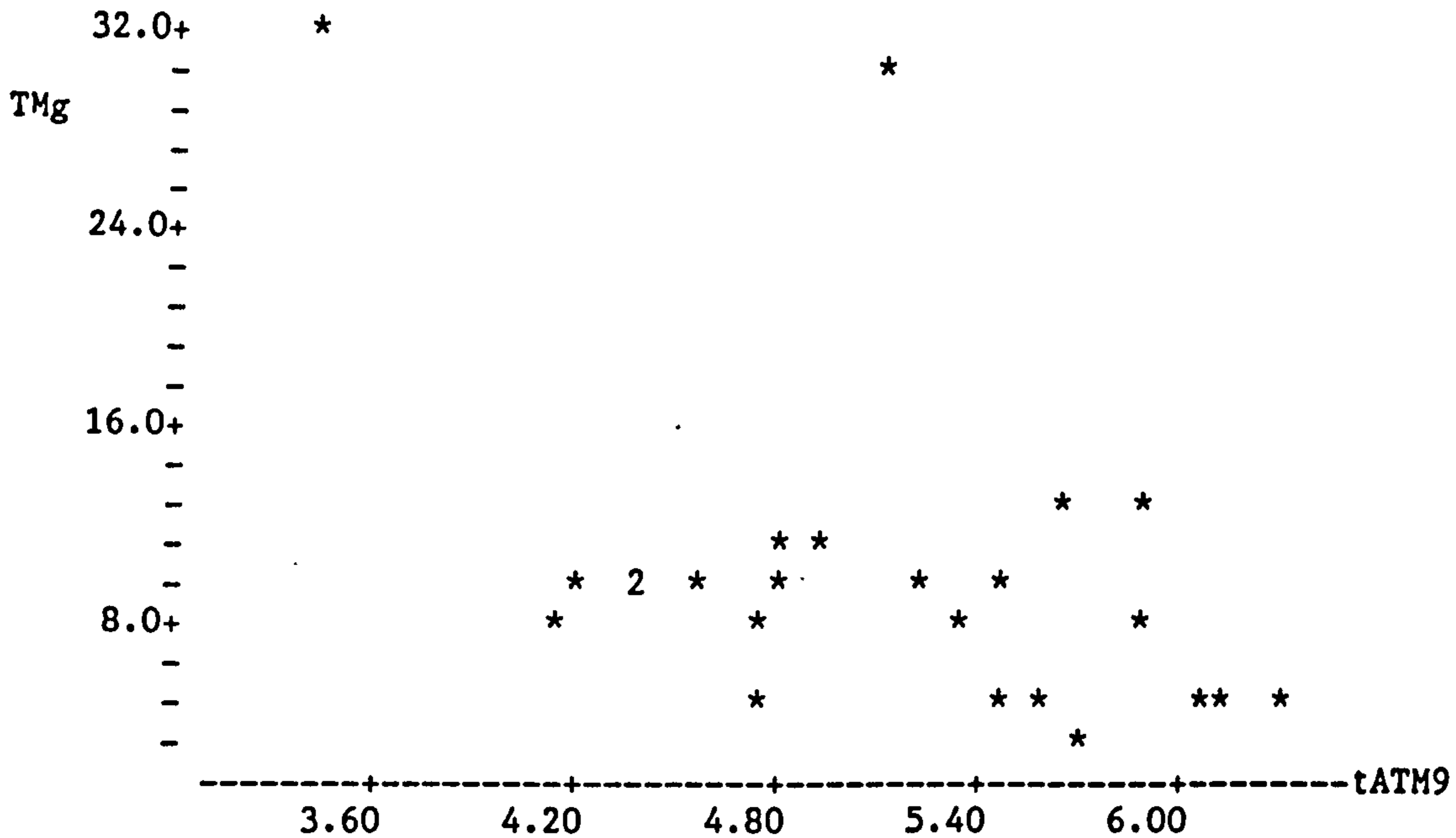
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 3548.1 | 3548.1 |
| Error | 22 | 8790.9 | 399.6 |
| Total | 23 | 12339.0 | |

Unusual Observations

| Obs. | TNDVI | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 1 | 0.349 | 33.00 | 12.04 | 10.94 | 20.96 | 1.25 X |

X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C141 and C153 = 0.612



Correlation of TMg and tATM9 = -0.467

The regression equation is
 TMg = 32.9 - 4.48 tATM9

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 32.941 | 9.367 | 3.52 |
| tATM9 | -4.481 | 1.811 | -2.47 |

s = 6.338 R-sq = 21.8% R-sq(adj) = 18.2%

Analysis of Variance

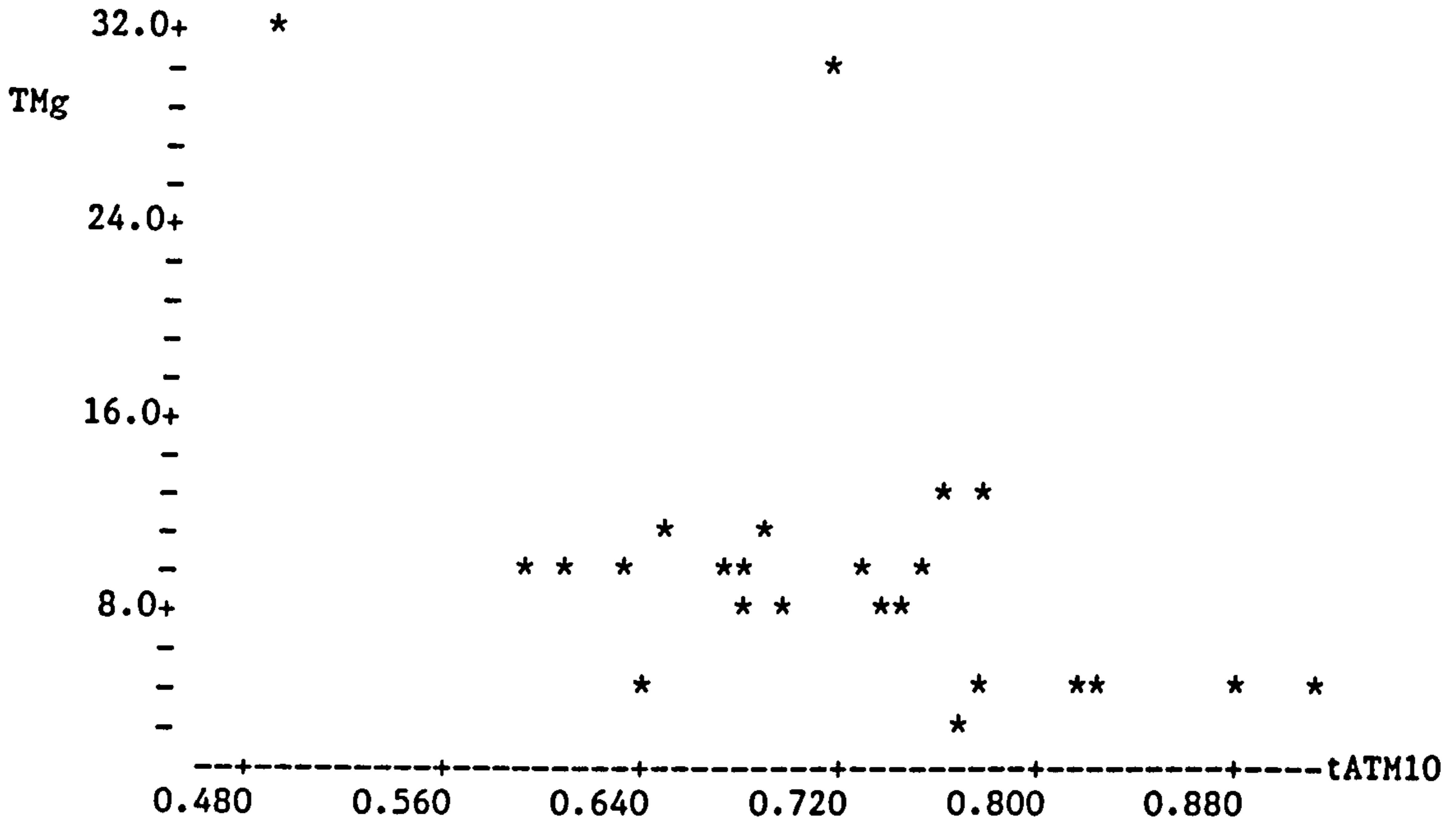
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 246.07 | 246.07 |
| Error | 22 | 883.83 | 40.17 |
| Total | 23 | 1129.90 | |

Unusual Observations

| Obs. | tATM9 | TMg | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 5.10 | 30.80 | 10.09 | 1.29 | 20.71 | 3.34R |
| 10 | 3.43 | 31.30 | 17.58 | 3.33 | 13.72 | 2.54RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C142 and C127 = -0.402



Correlation of TMg and tATM10 = -0.529

The regression equation is
 TMg = 38.1 - 39.3 tATM10

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 38.147 | 9.713 | 3.93 |
| tATM10 | -39.30 | 13.44 | -2.92 |

s = 6.082 R-sq = 28.0% R-sq(adj) = 24.7%

Analysis of Variance

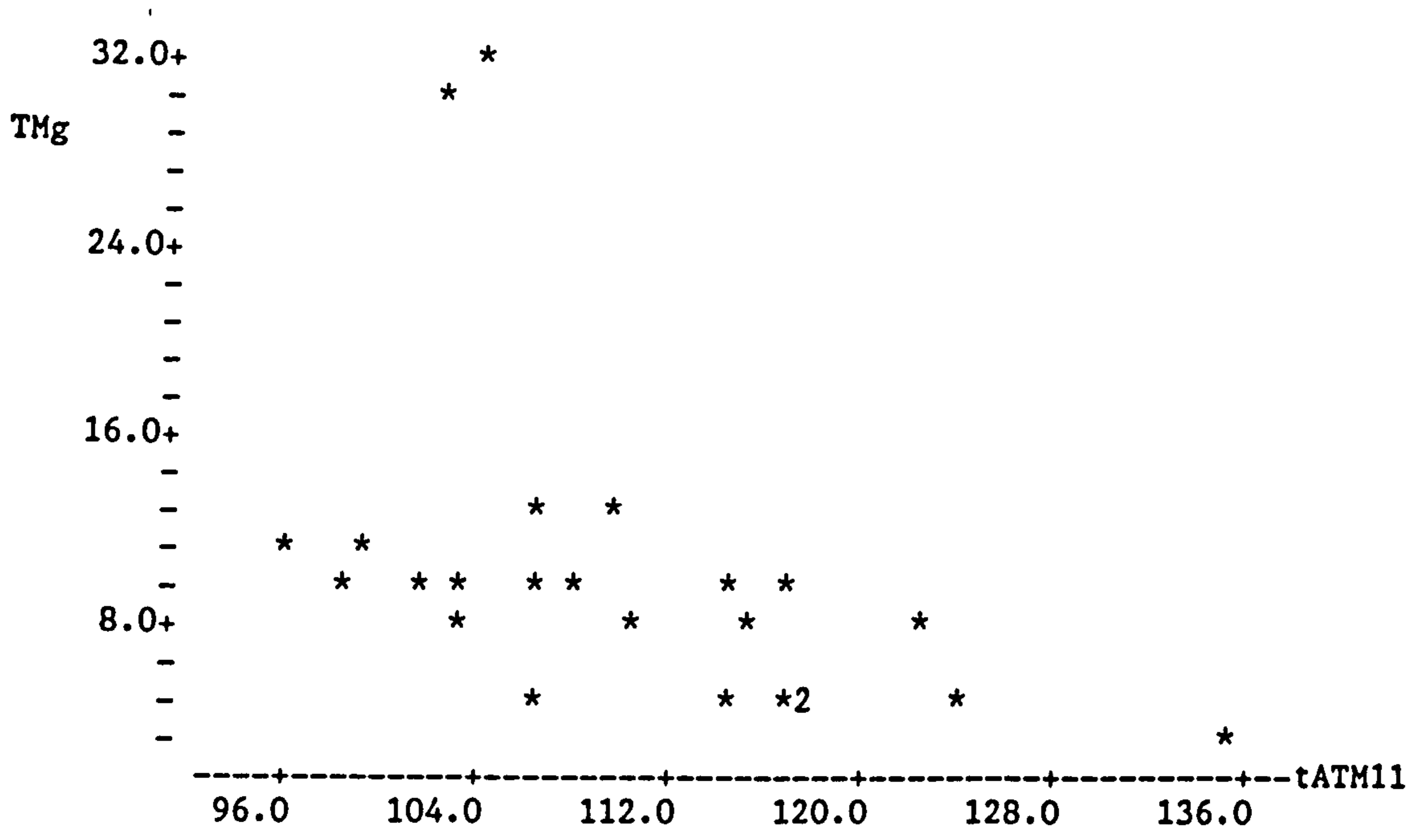
| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 316.16 | 316.16 |
| Error | 22 | 813.74 | 36.99 |
| Total | 23 | 1129.90 | |

Unusual Observations

| Obs. | tATM10 | TMg | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 9 | 0.708 | 30.80 | 10.30 | 1.25 | 20.50 | 3.44R |
| 10 | 0.484 | 31.30 | 19.11 | 3.36 | 12.19 | 2.40RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

SPEARMAN RANK Correlation of C142 and C128 = -0.484



Correlation of TMg and tATM1 = -0.465

The regression equation is
 TMg = 48.8 - 0.352 tATM1

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 48.84 | 15.82 | 3.09 |
| tATM1 | -0.3516 | 0.1427 | -2.46 |

s = 6.344 R-sq = 21.6% R-sq(adj) = 18.1%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 244.40 | 244.40 |
| Error | 22 | 885.50 | 40.25 |
| Total | 23 | 1129.90 | |

Unusual Observations

| Obs. | tATM1 | TMg | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 103 | 30.80 | 12.80 | 1.73 | 18.00 | 2.95R |
| 10 | 104 | 31.30 | 12.18 | 1.57 | 19.12 | 3.11R |
| 20 | 135 | 3.95 | 1.28 | 3.76 | 2.67 | 0.52 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

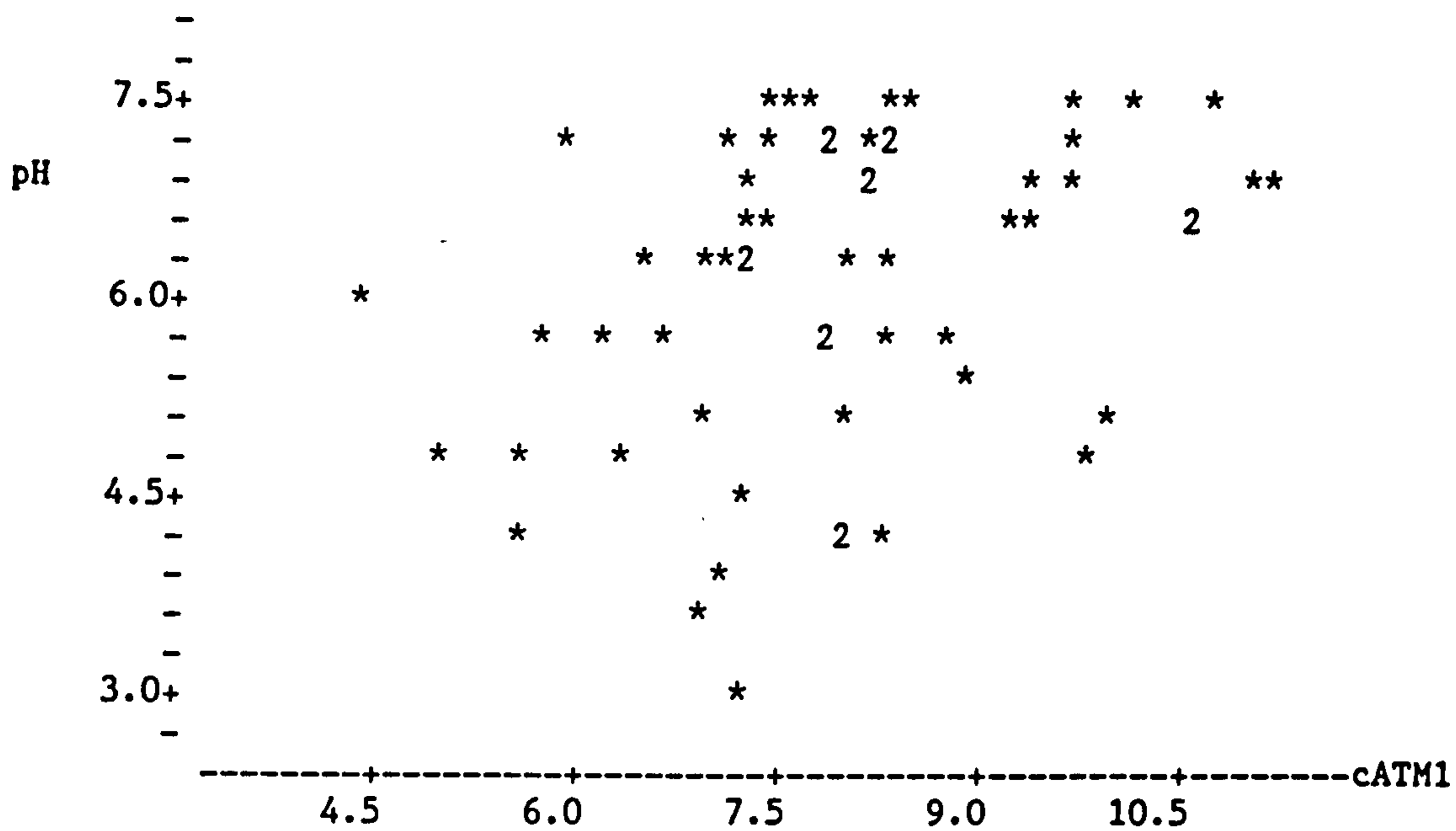
SPEARMAN RANK Correlation of C142 and C129 = -0.694

APPENDIX 4

CRYMLYN BOG STUDY

**RELATING AIRBORNE SCANNER DATA
TO FIELD-MEASURED VARIABLES**

**REGRESSION RESULTS AND SCATTER PLOTS
ALL FIELD SAMPLES COMBINED**



The regression equation is
 $pH = 3.94 + 0.280 \text{ cATM1}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.9393 | 0.7802 | 5.05 |
| cATM1 | 0.28009 | 0.09713 | 2.88 |

s = 1.102 R-sq = 12.4% R-sq(adj) = 10.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 10.092 | 10.092 |
| Error | 59 | 71.606 | 1.214 |
| Total | 60 | 81.698 | |

Unusual Observations

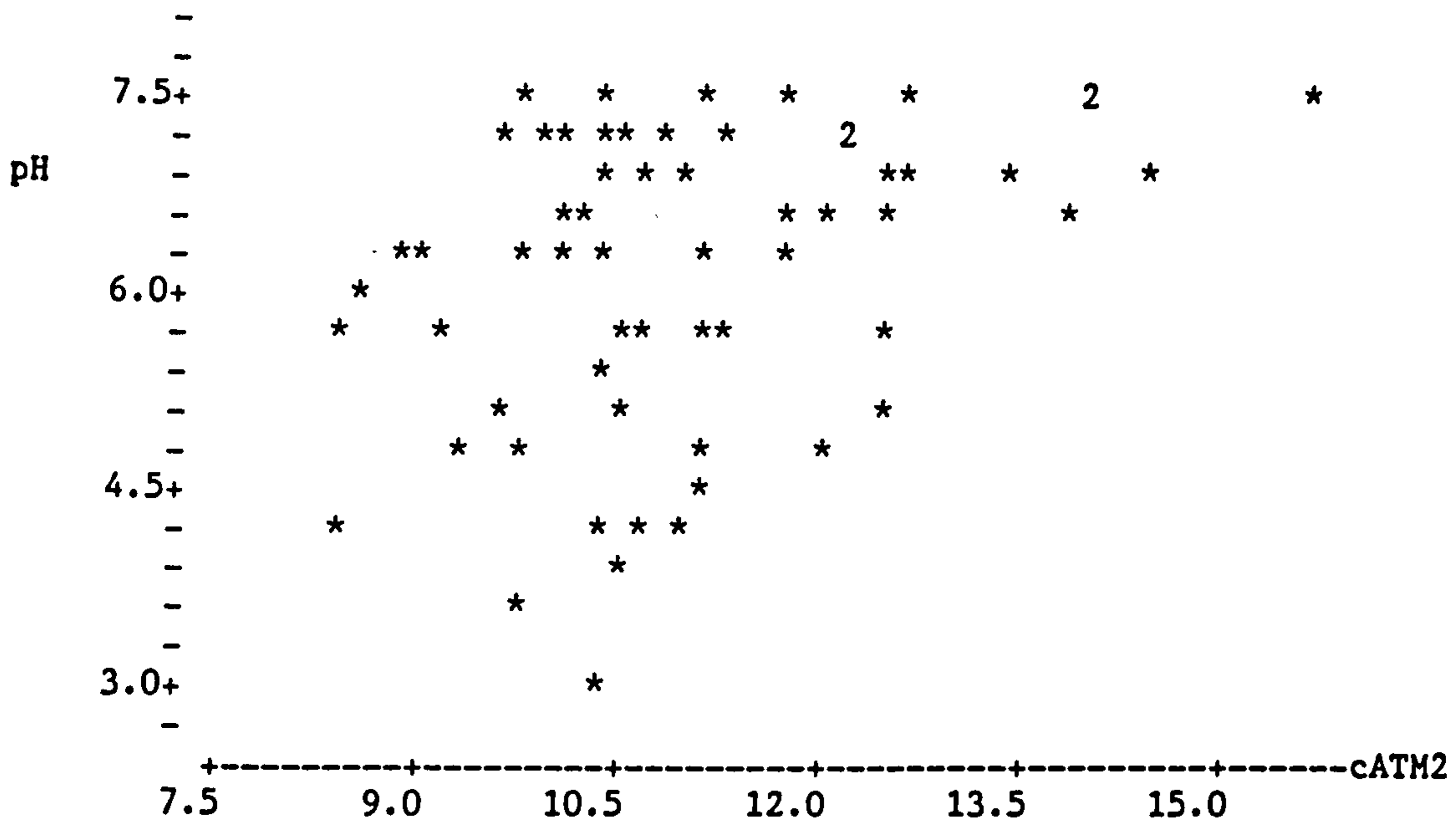
| Obs. | cATM1 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 4.4 | 5.930 | 5.167 | 0.369 | 0.763 | 0.73 X |
| 16 | 7.2 | 3.140 | 5.961 | 0.156 | -2.821 | -2.59R |
| 19 | 6.9 | 3.510 | 5.865 | 0.173 | -2.355 | -2.16R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM1 = 0.351

SPEARMAN RANK Correlation = 0.380



The regression equation is
 $\text{pH} = 3.02 + 0.284 \text{ cATM2}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.025 | 1.036 | 2.92 |
| cATM2 | 0.28432 | 0.09333 | 3.05 |

$s = 1.094$ $R\text{-sq} = 13.6\%$ $R\text{-sq}(\text{adj}) = 12.1\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 11.105 | 11.105 |
| Error | 59 | 70.593 | 1.196 |
| Total | 60 | 81.698 | |

Unusual Observations

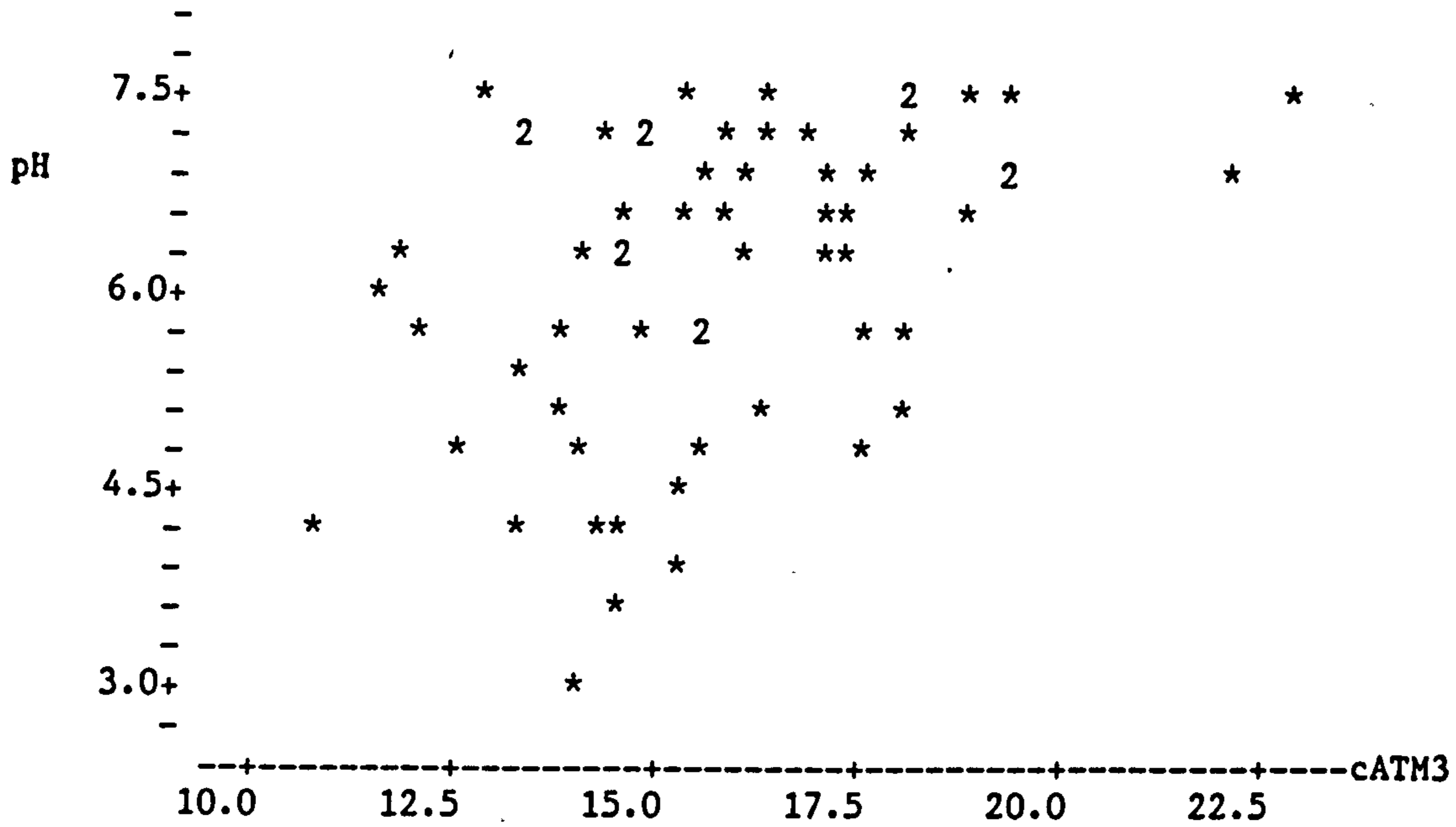
| Obs. | cATM2 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 14.4 | 7.000 | 7.126 | 0.349 | -0.126 | -0.12 X |
| 16 | 10.4 | 3.140 | 5.975 | 0.152 | -2.835 | -2.62R |
| 19 | 9.8 | 3.510 | 5.807 | 0.180 | -2.297 | -2.13R |
| 43 | 15.6 | 7.590 | 7.461 | 0.452 | 0.129 | 0.13 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM2 = 0.369

SPEARMAN RANK Correlation = 0.348



The regression equation is
 $pH = 3.00 + 0.200 cATM3$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.0049 | 0.9289 | 3.24 |
| cATM3 | 0.20034 | 0.05848 | 3.43 |

$s = 1.075$ $R-sq = 16.6\%$ $R-sq(adj) = 15.2\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 13.555 | 13.555 |
| Error | 59 | 68.142 | 1.155 |
| Total | 60 | 81.698 | |

Unusual Observations

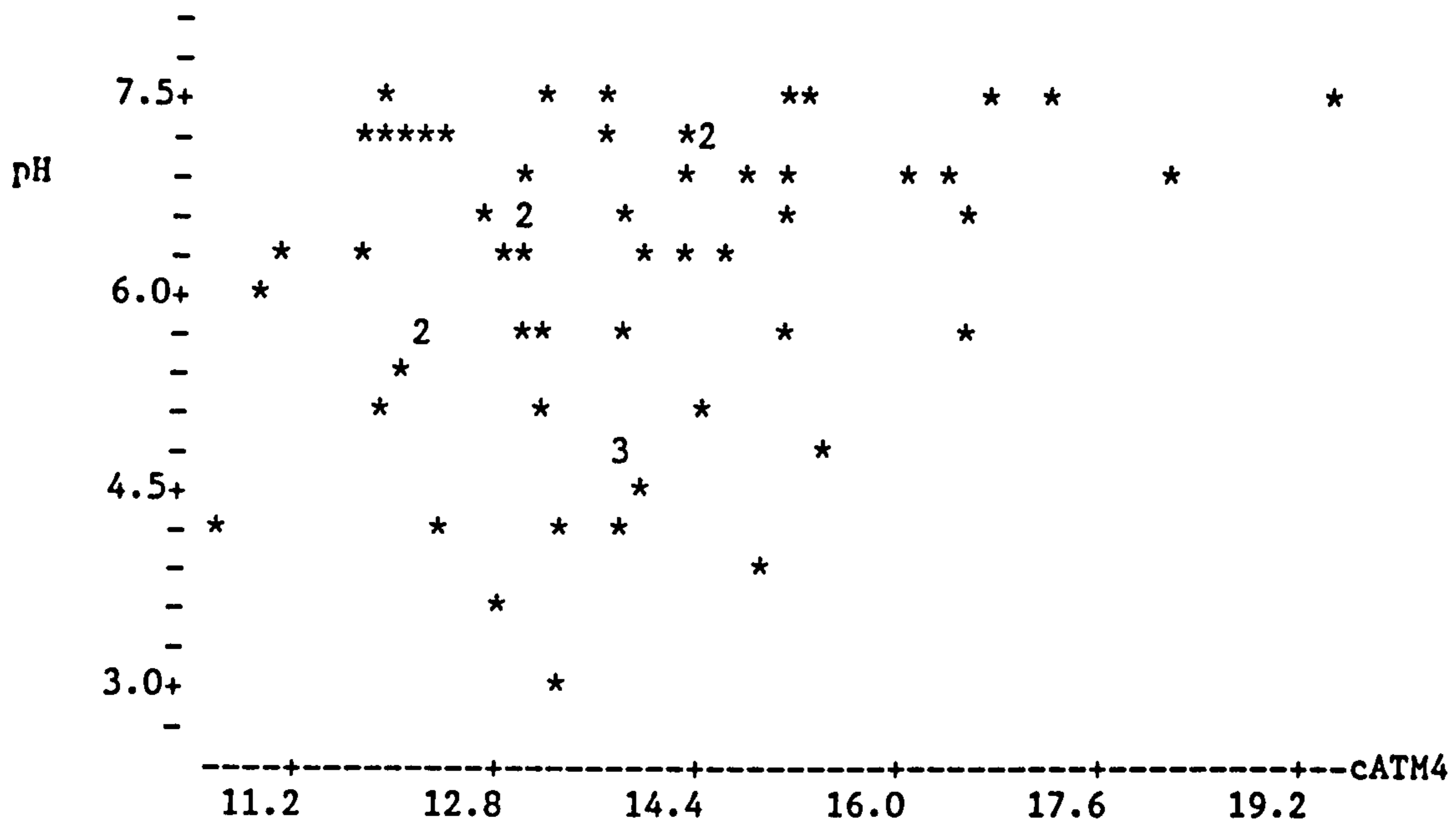
| Obs. | cATM3 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 22.1 | 7.000 | 7.429 | 0.397 | -0.429 | -0.43 X |
| 16 | 13.9 | 3.140 | 5.791 | 0.173 | -2.651 | -2.50R |
| 19 | 14.4 | 3.510 | 5.896 | 0.157 | -2.386 | -2.24R |
| 43 | 22.7 | 7.590 | 7.555 | 0.432 | 0.035 | 0.04 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM3 = 0.407

SPEARMAN RANK Correlation = 0.413



The regression equation is
 $pH = 3.77 + 0.173 \text{ cATM4}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.766 | 1.171 | 3.22 |
| cATM4 | 0.17335 | 0.08439 | 2.05 |

s = 1.137 R-sq = 6.7% R-sq(adj) = 5.1%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 5.453 | 5.453 |
| Error | 59 | 76.245 | 1.292 |
| Total | 60 | 81.698 | |

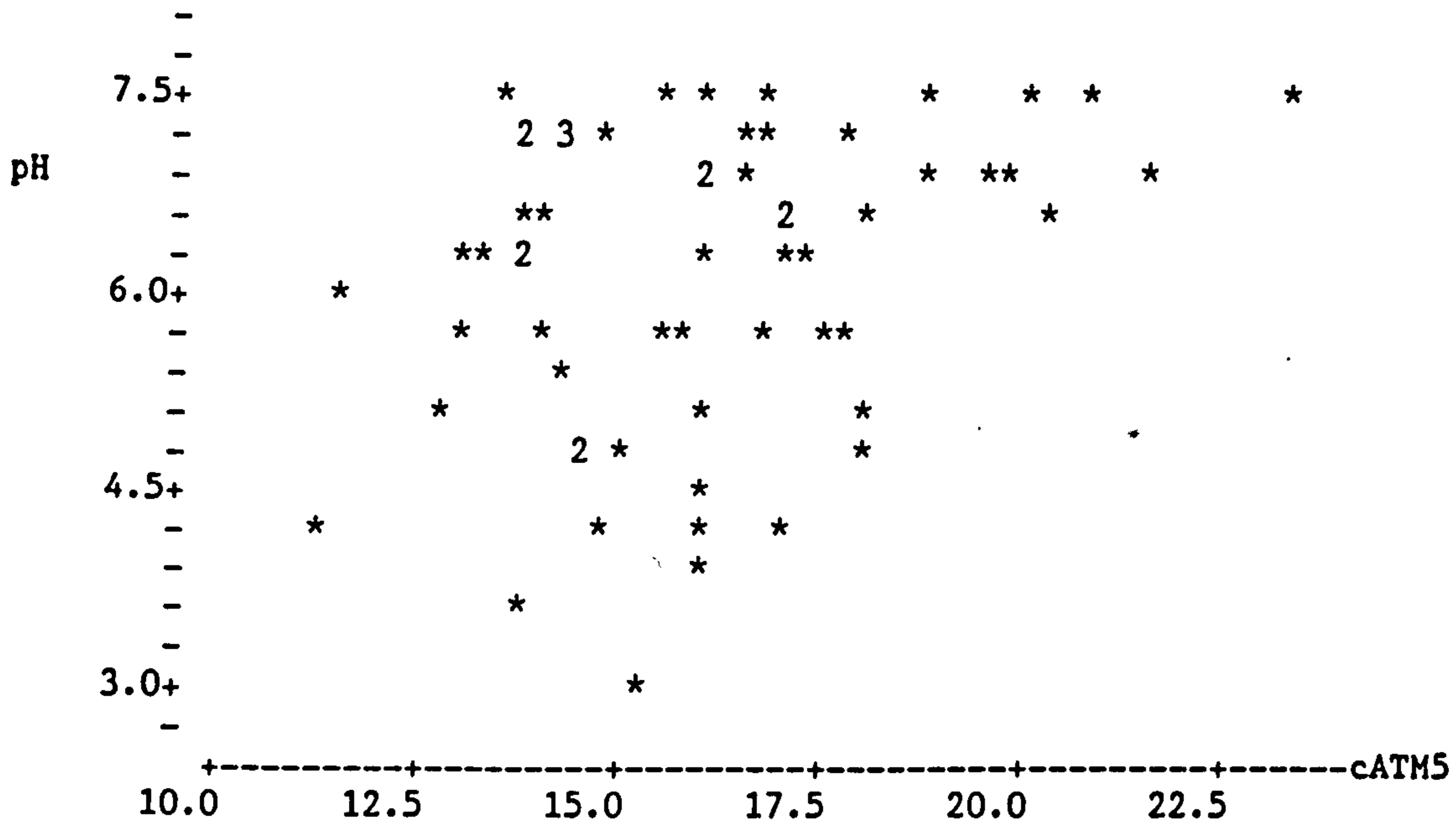
Unusual Observations

| Obs. | cATM4 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 4 | 14.9 | 4.020 | 6.343 | 0.173 | -2.323 | -2.07R |
| 9 | 18.1 | 7.000 | 6.906 | 0.395 | 0.094 | 0.09 X |
| 16 | 13.3 | 3.140 | 6.069 | 0.151 | -2.929 | -2.60R |
| 19 | 12.8 | 3.510 | 5.984 | 0.167 | -2.474 | -2.20R |
| 43 | 19.3 | 7.590 | 7.111 | 0.489 | 0.479 | 0.47 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM4 = 0.258

SPEARMAN RANK Correlation = 0.222



The regression equation is
 $pH = 3.83 + 0.145 \text{ cATM5}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.8295 | 0.9659 | 3.96 |
| cATM5 | 0.14505 | 0.05966 | 2.43 |

s = 1.122 R-sq = 9.1% R-sq(adj) = 7.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 7.441 | 7.441 |
| Error | 59 | 74.257 | 1.259 |
| Total | 60 | 81.698 | |

Unusual Observations

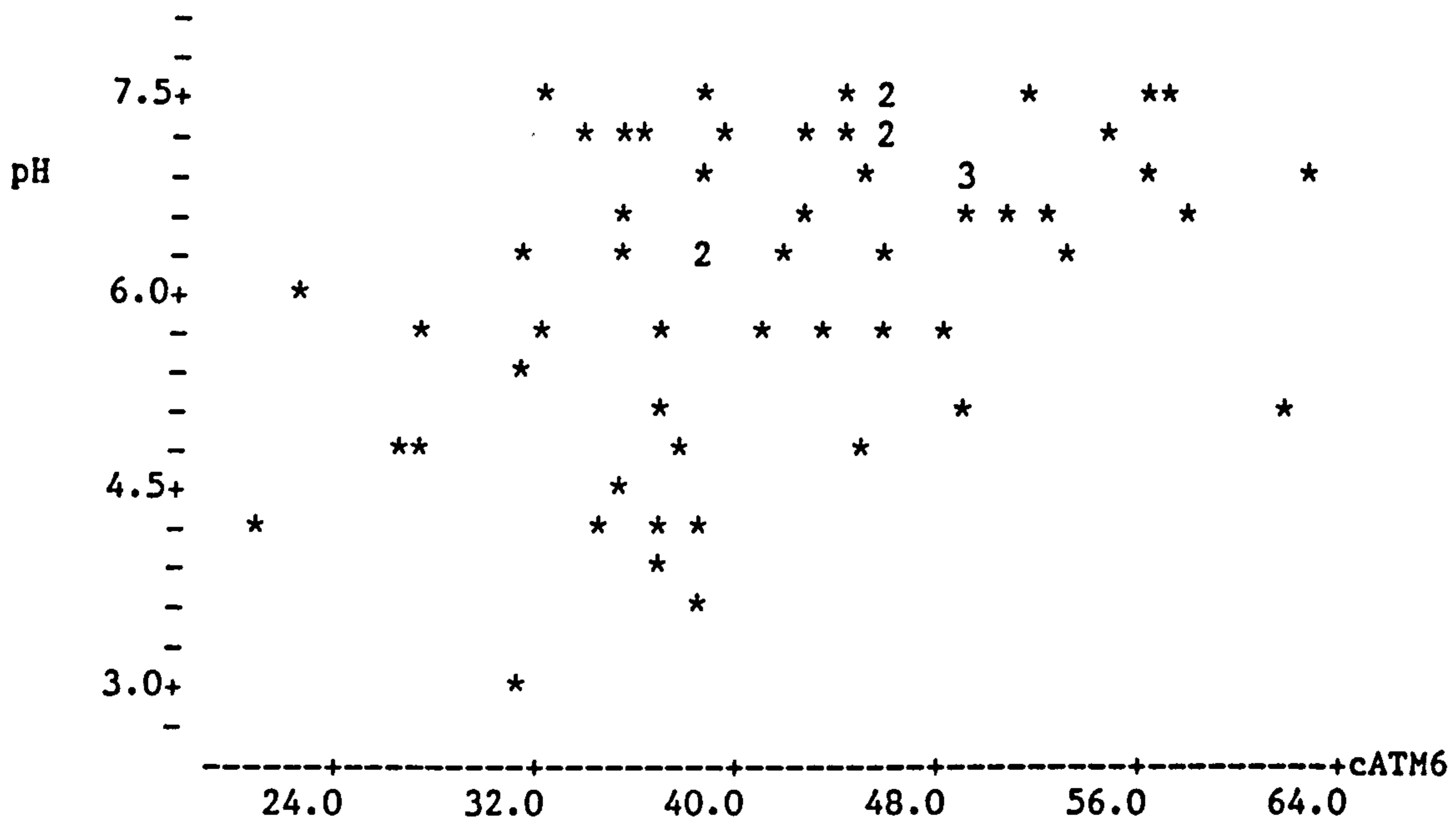
| Obs. | cATM5 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 21.5 | 7.000 | 6.947 | 0.357 | 0.053 | 0.05 X |
| 16 | 15.3 | 3.140 | 6.051 | 0.150 | -2.911 | -2.62R |
| 19 | 13.8 | 3.510 | 5.838 | 0.193 | -2.328 | -2.11R |
| 43 | 23.4 | 7.590 | 7.217 | 0.461 | 0.373 | 0.36 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM5 = 0.302

SPEARMAN RANK Correlation = 0.255



The regression equation is
 $pH = 3.90 + 0.0540 \text{ cATM6}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.8979 | 0.6328 | 6.16 |
| cATM6 | 0.05400 | 0.01481 | 3.65 |

s = 1.063 R-sq = 18.4% R-sq(adj) = 17.0%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 15.030 | 15.030 |
| Error | 59 | 66.667 | 1.130 |
| Total | 60 | 81.698 | |

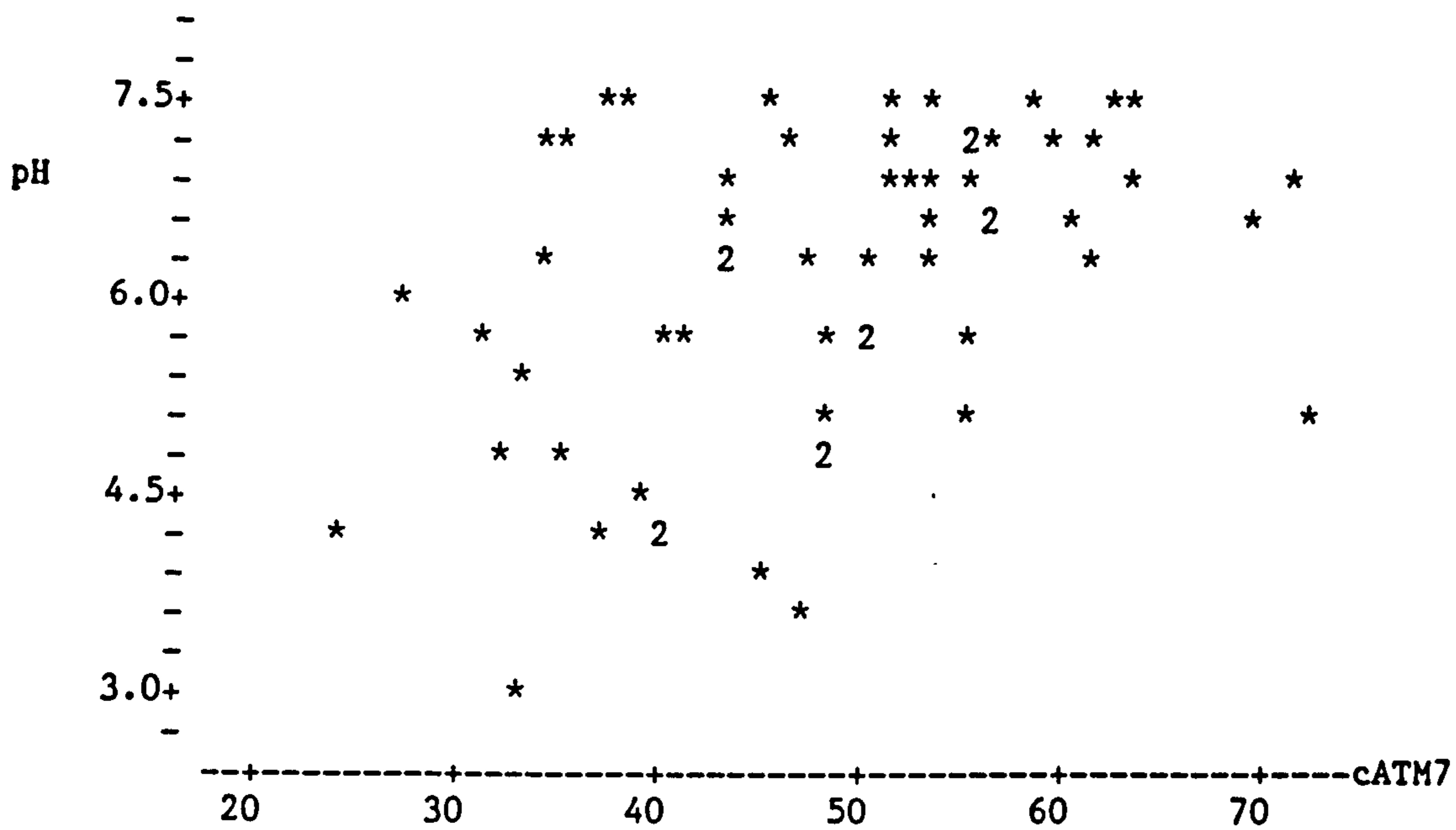
Unusual Observations

| Obs. | cATM6 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 3 | 20.8 | 4.130 | 5.021 | 0.339 | -0.891 | -0.88 X |
| 9 | 62.7 | 7.000 | 7.283 | 0.339 | -0.283 | -0.28 X |
| 16 | 31.3 | 3.140 | 5.590 | 0.206 | -2.450 | -2.35R |
| 19 | 38.1 | 3.510 | 5.957 | 0.146 | -2.447 | -2.32R |
| 28 | 61.7 | 4.980 | 7.228 | 0.325 | -2.248 | -2.22R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM6 = 0.429

SPEARMAN RANK Correlation = 0.440



The regression equation is
 $pH = 3.95 + 0.0457 \text{ cATM7}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 3.9539 | 0.6269 | 6.31 |
| cATM7 | 0.04571 | 0.01272 | 3.59 |

s = 1.066 R-sq = 17.9% R-sq(adj) = 16.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 14.662 | 14.662 |
| Error | 59 | 67.036 | 1.136 |
| Total | 60 | 81.698 | |

Unusual Observations

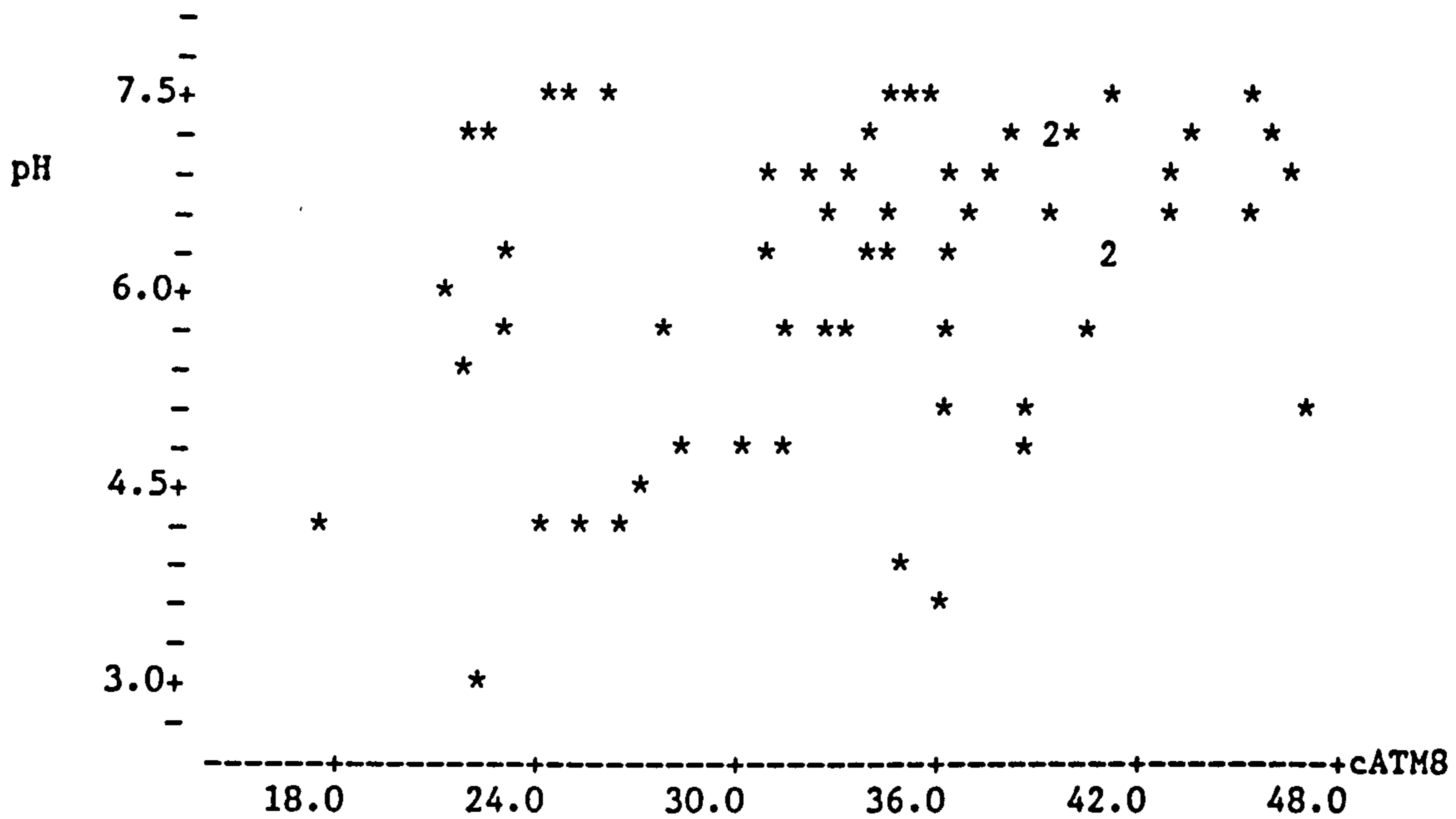
| Obs. | cATM7 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 3 | 23.7 | 4.130 | 5.039 | 0.339 | -0.909 | -0.90 X |
| 16 | 32.9 | 3.140 | 5.457 | 0.237 | -2.317 | -2.23R |
| 19 | 46.8 | 3.510 | 6.094 | 0.137 | -2.584 | -2.44R |
| 28 | 71.8 | 4.980 | 7.234 | 0.331 | -2.254 | -2.22R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM7 = 0.424

SPEARMAN RANK Correlation = 0.438



The regression equation is
 $pH = 4.39 + 0.0527 \text{ cATM8}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | 4.3886 | 0.6665 | 6.58 |
| cATM8 | 0.05275 | 0.01948 | 2.71 |

s = 1.110 R-sq = 11.1% R-sq(adj) = 9.5%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 9.033 | 9.033 |
| Error | 59 | 72.665 | 1.232 |
| Total | 60 | 81.698 | |

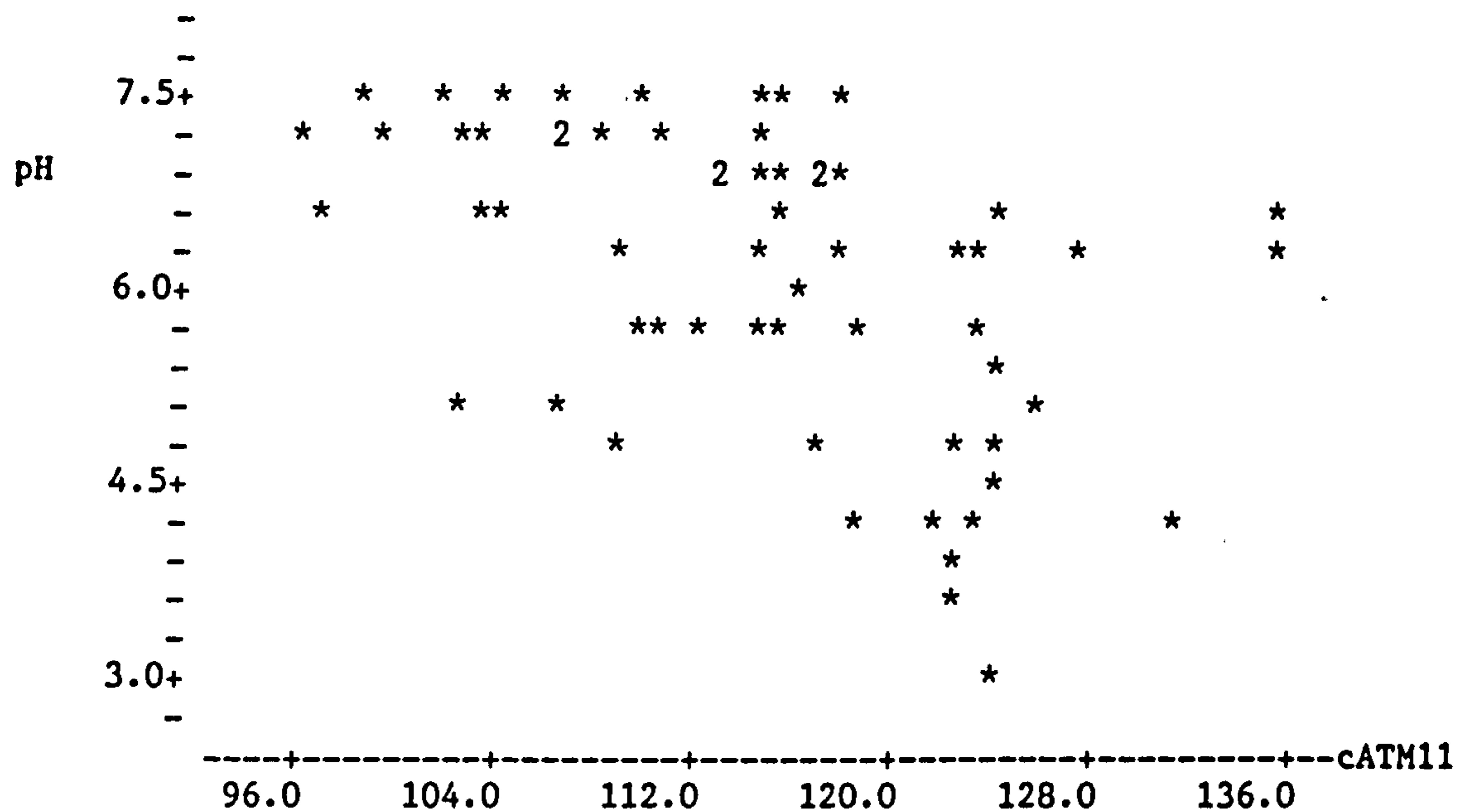
Unusual Observations

| Obs. | cATM8 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 4 | 35.1 | 4.020 | 6.239 | 0.146 | -2.219 | -2.02R |
| 16 | 22.3 | 3.140 | 5.567 | 0.259 | -2.427 | -2.25R |
| 19 | 35.8 | 3.510 | 6.275 | 0.149 | -2.765 | -2.51R |

R denotes an obs. with a large st. resid.

Correlation of pH and cATM8 = 0.333

SPEARMAN RANK Correlation = 0.304



The regression equation is
 $\text{pH} = 13.3 - 0.0622 \text{ cATM11}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 13.278 | 1.670 | 7.95 |
| cATM11 | -0.06221 | 0.01453 | -4.28 |

$s = 1.028$ $R\text{-sq} = 23.7\%$ $R\text{-sq}(\text{adj}) = 22.4\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 19.358 | 19.358 |
| Error | 59 | 62.339 | 1.057 |
| Total | 60 | 81.698 | |

Unusual Observations

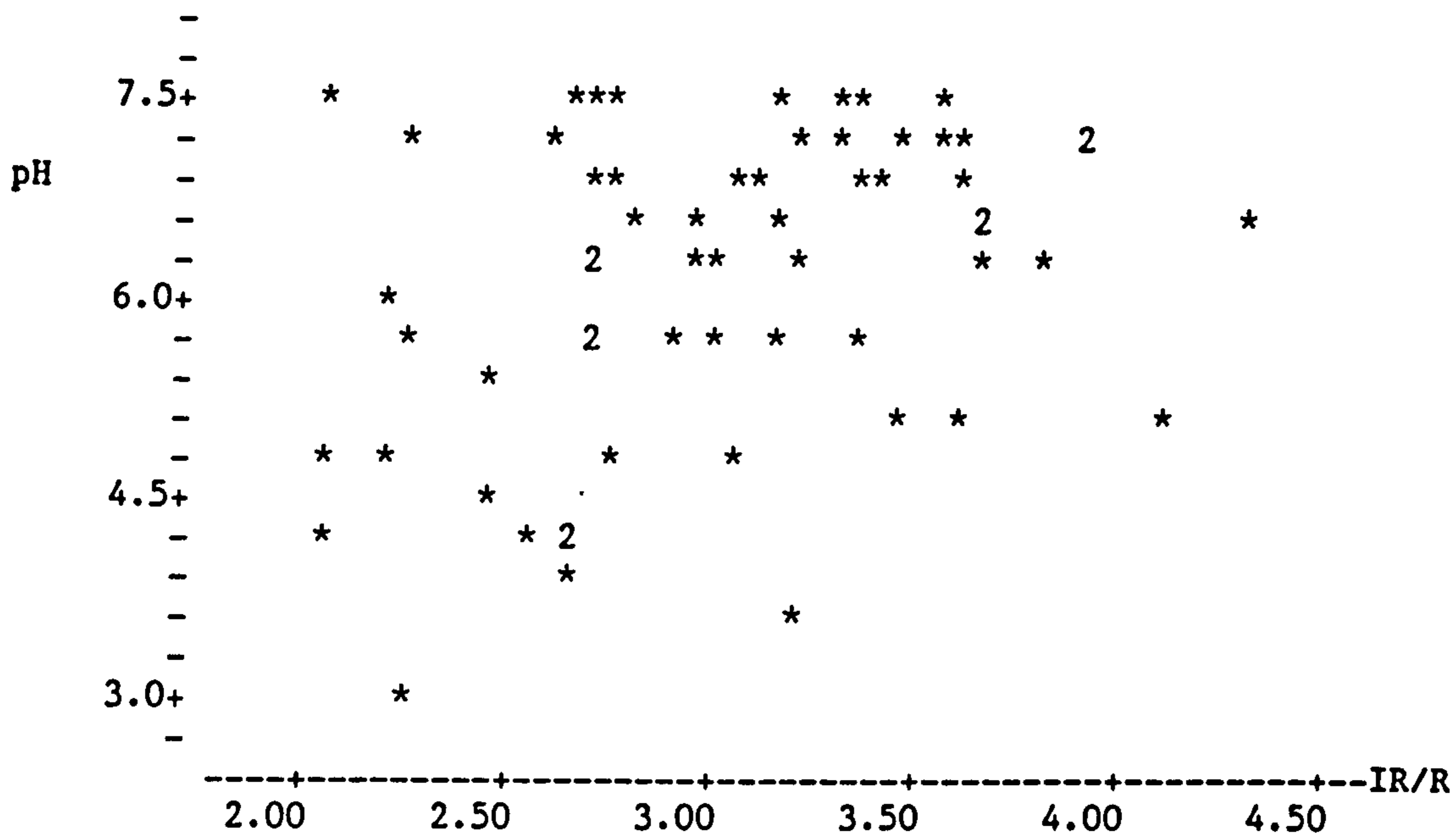
| Obs. | cATM11 | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 16 | 124 | 3.140 | 5.564 | 0.190 | -2.424 | -2.40R |
| 18 | 135 | 6.340 | 4.864 | 0.328 | 1.476 | 1.51 X |
| 19 | 123 | 3.510 | 5.658 | 0.175 | -2.148 | -2.12R |
| 57 | 135 | 6.690 | 4.864 | 0.328 | 1.826 | 1.87 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of pH and cATM11 = -0.487

SPEARMAN RANK Correlation = -0.541



The regression equation is
 $pH = 3.84 + 0.765 IR/R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | 3.8450 | 0.8107 | 4.74 |
| IR/R | 0.7651 | 0.2648 | 2.89 |

s = 1.101 R-sq = 12.4% R-sq(adj) = 10.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 10.129 | 10.129 |
| Error | 59 | 71.569 | 1.213 |
| Total | 60 | 81.698 | |

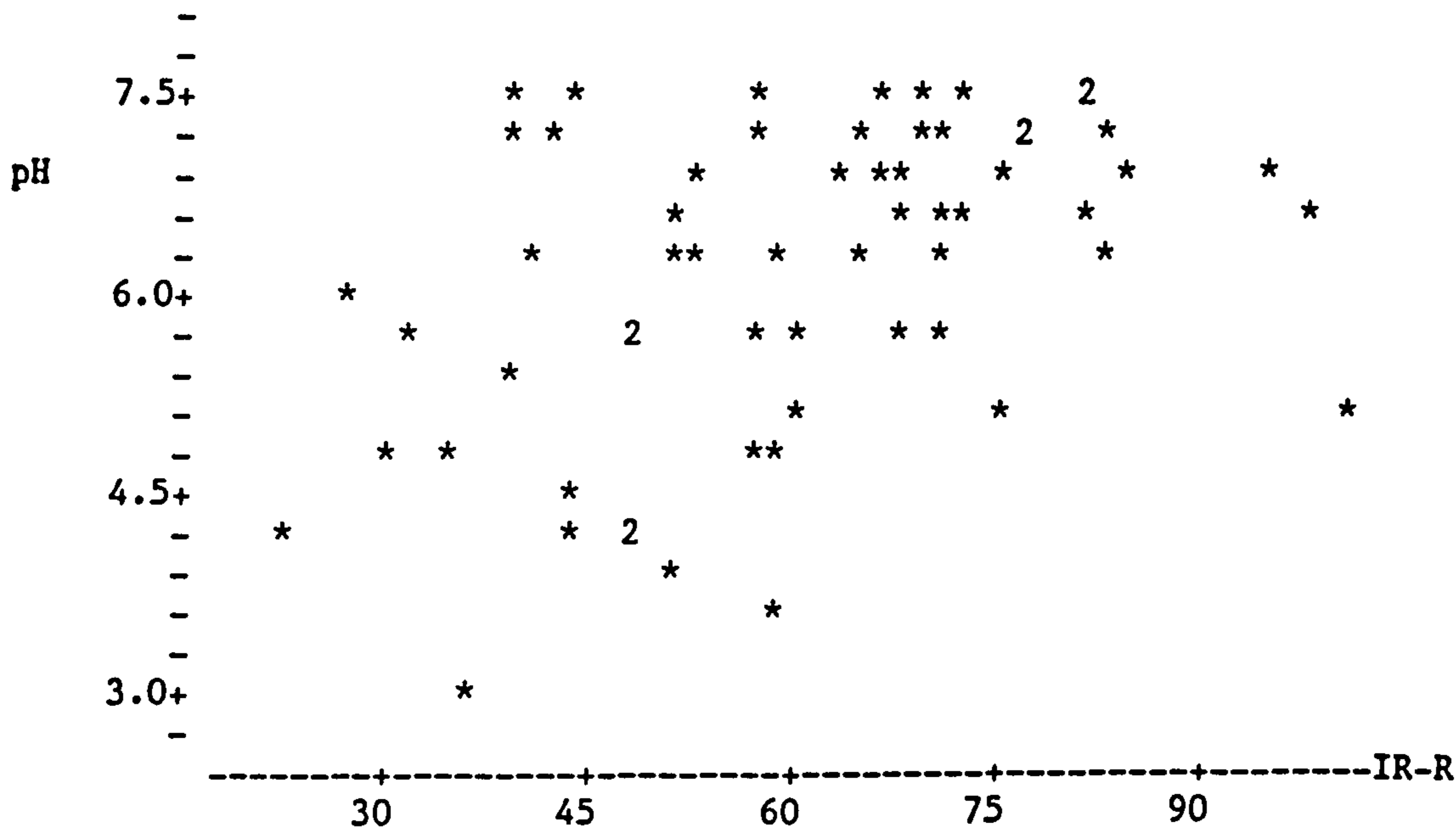
Unusual Observations

| Obs. | IR/R | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 16 | 2.24 | 3.140 | 5.562 | 0.248 | -2.422 | -2.26R |
| 19 | 3.19 | 3.510 | 6.285 | 0.148 | -2.775 | -2.54R |
| 38 | 2.07 | 7.620 | 5.429 | 0.287 | 2.191 | 2.06R |
| 61 | 4.31 | 6.580 | 7.141 | 0.370 | -0.561 | -0.54 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of pH and IR/R = 0.352

SPEARMAN RANK Correlation = 0.342



The regression equation is
 $pH = 4.48 + 0.0279 \text{ IR-R}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | 4.4788 | 0.4906 | 9.13 |
| IR-R | 0.027860 | 0.007846 | 3.55 |

$s = 1.068$ $R\text{-sq} = 17.6\%$ $R\text{-sq(adj)} = 16.2\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 14.385 | 14.385 |
| Error | 59 | 67.312 | 1.141 |
| Total | 60 | 81.698 | |

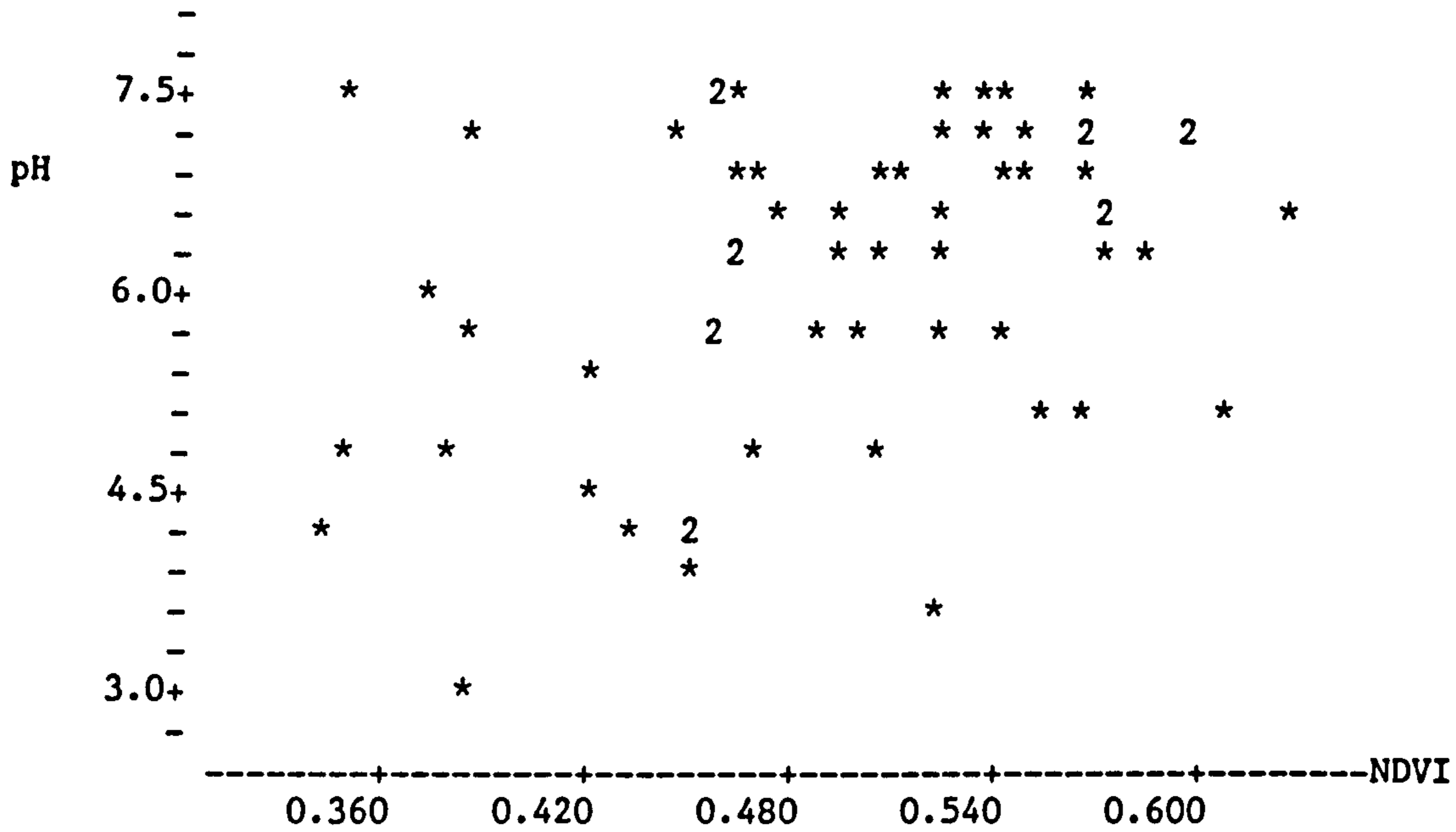
Unusual Observations

| Obs. | IR-R | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 16 | 36 | 3.140 | 5.471 | 0.236 | -2.331 | -2.24R |
| 19 | 58 | 3.510 | 6.104 | 0.137 | -2.594 | -2.45R |
| 28 | 101 | 4.980 | 7.292 | 0.349 | -2.312 | -2.29RX |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of pH and IR-R = 0.420

SPEARMAN RANK Correlation = 0.421



The regression equation is
 $pH = 3.07 + 6.26 \text{ NDVI}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-------|-------|---------|
| Constant | 3.069 | 1.018 | 3.02 |
| NDVI | 6.255 | 2.045 | 3.06 |

$s = 1.093$ $R\text{-sq} = 13.7\%$ $R\text{-sq(adj)} = 12.2\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 11.182 | 11.182 |
| Error | 59 | 70.515 | 1.195 |
| Total | 60 | 81.698 | |

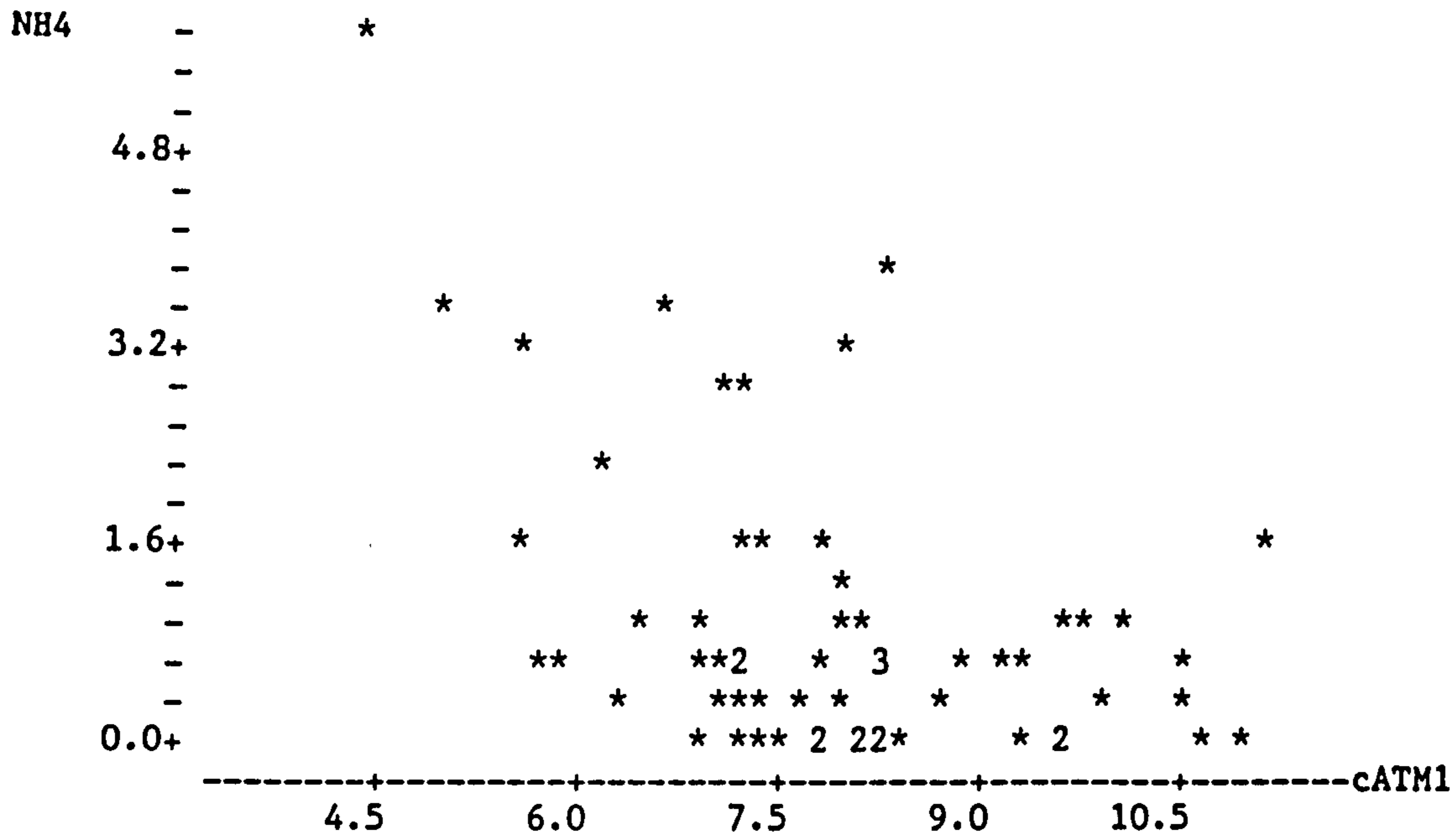
Unusual Observations

| Obs. | NDVI | pH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 16 | 0.384 | 3.140 | 5.468 | 0.264 | -2.328 | -2.19R |
| 19 | 0.523 | 3.510 | 6.338 | 0.153 | -2.828 | -2.61R |
| 38 | 0.349 | 7.620 | 5.249 | 0.327 | 2.371 | 2.27R |

R denotes an obs. with a large st. resid.

Correlation of pH and NDVI = 0.370

SPEARMAN RANK Correlation = 0.342



The regression equation is
 $NH4 = 3.89 - 0.370 \text{ cATM1}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.8936 | 0.7392 | 5.27 |
| cATM1 | -0.37003 | 0.09203 | -4.02 |

s = 1.044 R-sq = 21.5% R-sq(adj) = 20.2%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 17.614 | 17.614 |
| Error | 59 | 64.278 | 1.089 |
| Total | 60 | 81.891 | |

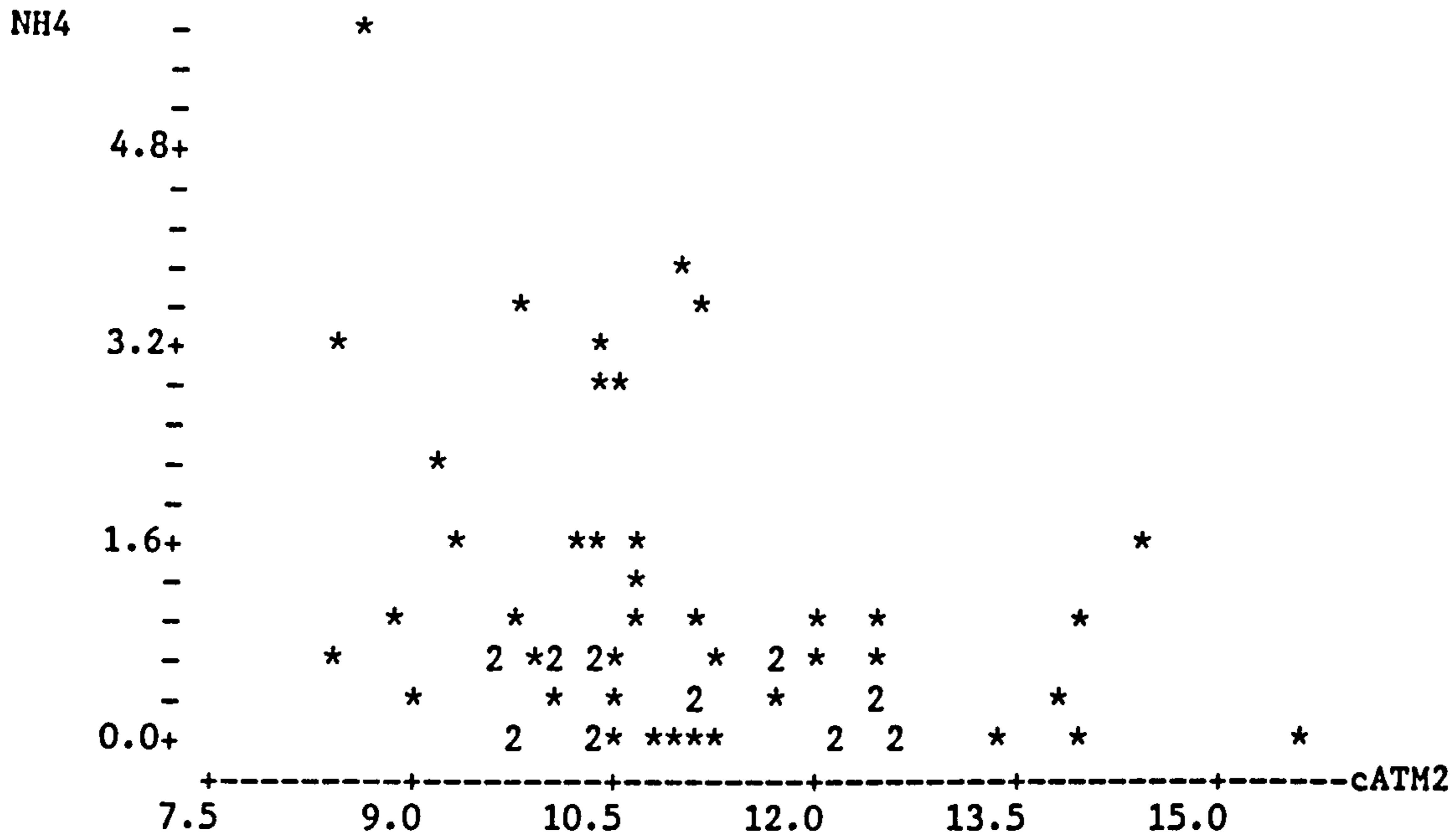
Unusual Observations

| Obs. | cATM1 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 4.4 | 5.640 | 2.271 | 0.350 | 3.369 | 3.43RX |
| 13 | 7.9 | 3.070 | 0.966 | 0.134 | 2.104 | 2.03R |
| 23 | 8.2 | 3.760 | 0.864 | 0.136 | 2.896 | 2.80R |
| 35 | 6.7 | 3.500 | 1.427 | 0.175 | 2.073 | 2.01R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM1 = -0.464

SPEARMAN RANK Correlation = -0.361



The regression equation is
 NH4 = 4.05 - 0.280 cATM2

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 4.054 | 1.040 | 3.90 |
| cATM2 | -0.28032 | 0.09366 | -2.99 |

s = 1.098 R-sq = 13.2% R-sq(adj) = 11.7%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 10.795 | 10.795 |
| Error | 59 | 71.096 | 1.205 |
| Total | 60 | 81.891 | |

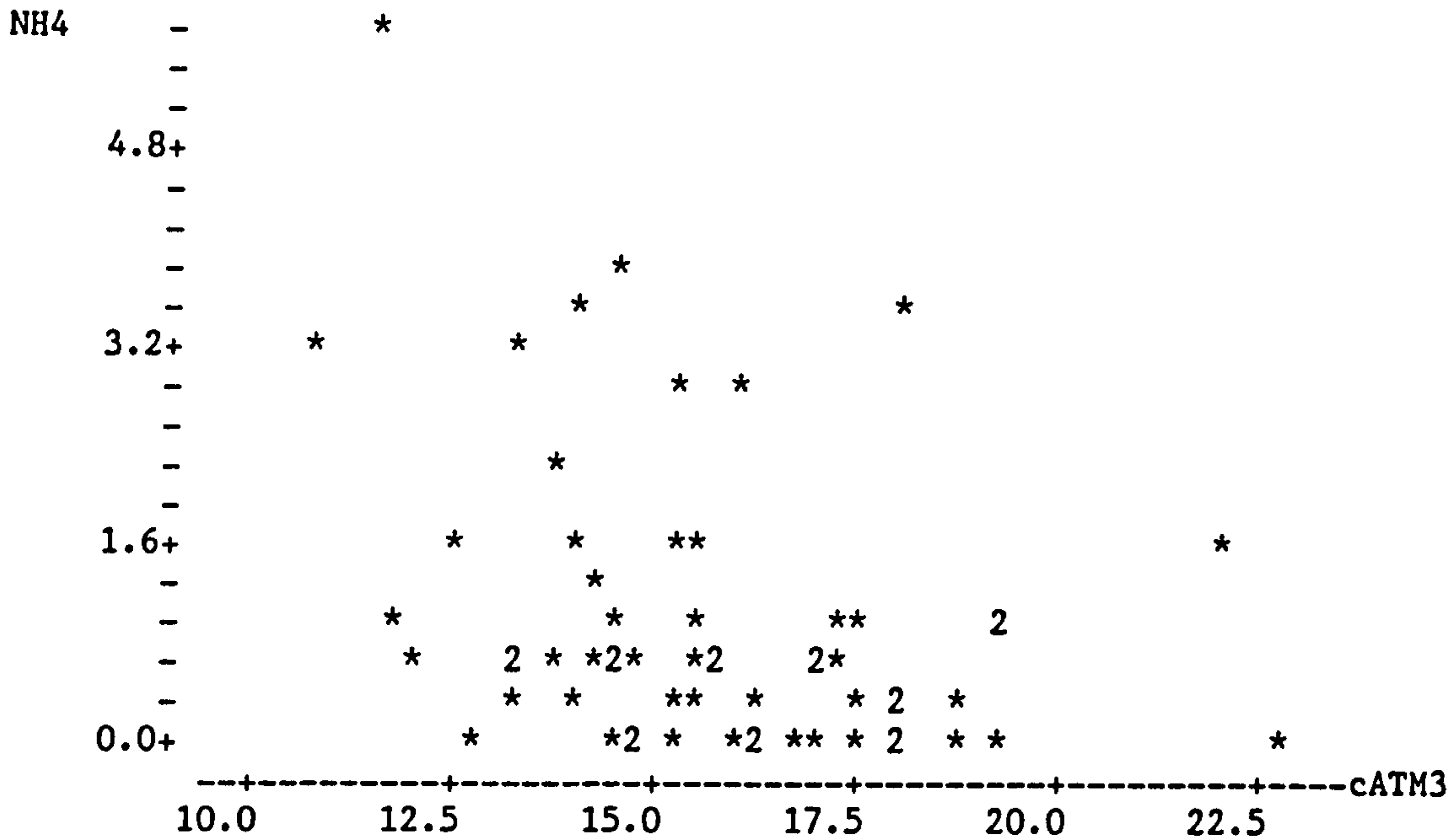
Unusual Observations

| Obs. | cATM2 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|--------|-----------|----------|----------|
| 6 | 8.6 | 5.640 | 1.642 | 0.265 | 3.998 | 3.75R |
| 9 | 14.4 | 1.440 | 0.010 | 0.350 | 1.430 | 1.37 X |
| 23 | 10.9 | 3.760 | 1.003 | 0.141 | 2.757 | 2.53R |
| 35 | 11.1 | 3.500 | 0.932 | 0.141 | 2.568 | 2.36R |
| 36 | 9.7 | 3.670 | 1.334 | 0.186 | 2.336 | 2.16R |
| 43 | 15.6 | 0.050 | -0.321 | 0.454 | 0.371 | 0.37 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM2 = -0.363

SPEARMAN RANK Correlation = -0.381



The regression equation is
 NH4 = 3.66 - 0.171 cATM3

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.6619 | 0.9546 | 3.84 |
| cATM3 | -0.17134 | 0.06010 | -2.85 |

s = 1.105 R-sq = 12.1% R-sq(adj) = 10.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 9.915 | 9.915 |
| Error | 59 | 71.976 | 1.220 |
| Total | 60 | 81.891 | |

Unusual Observations

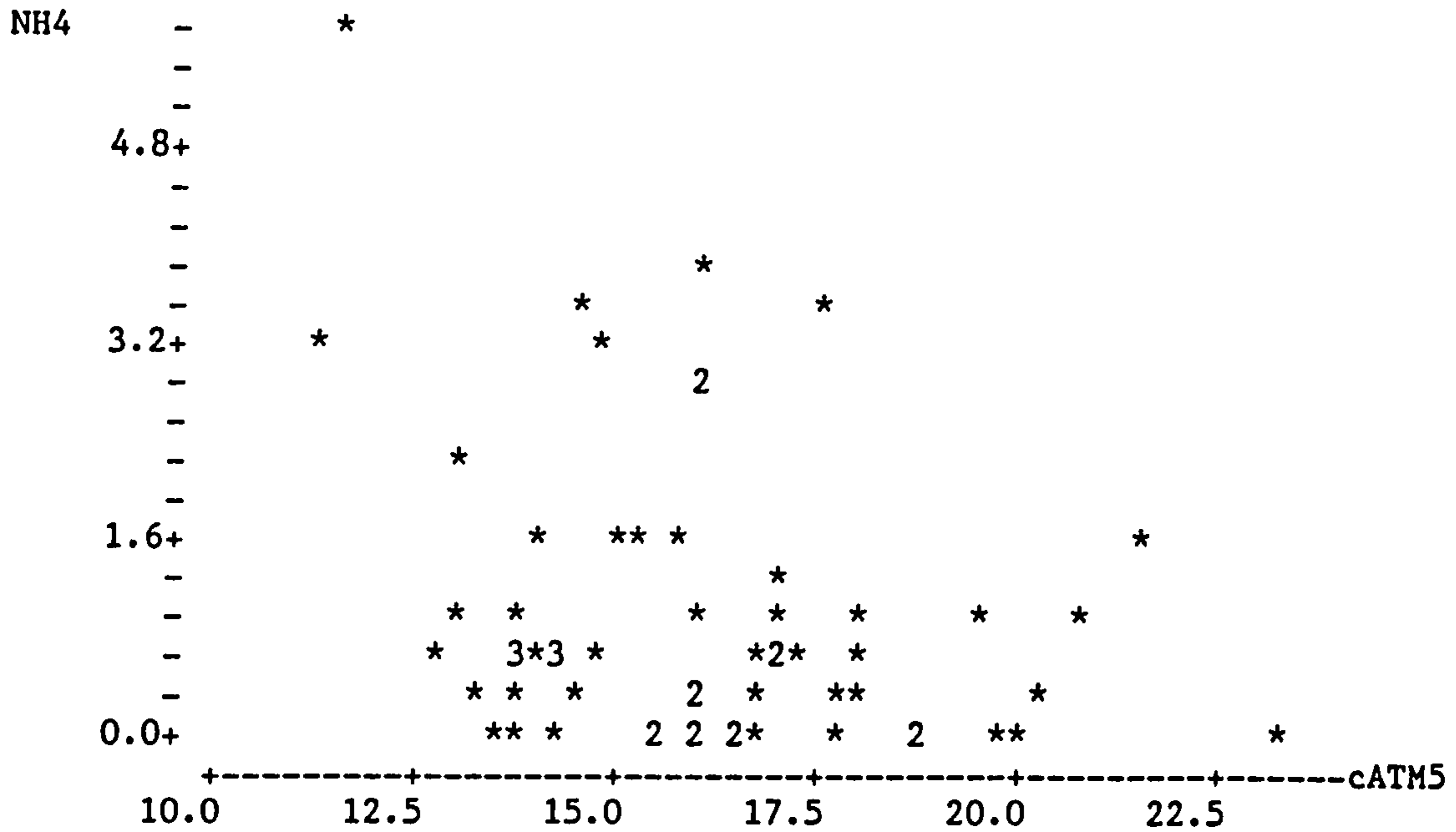
| Obs. | cATM3 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|--------|-----------|----------|----------|
| 6 | 11.6 | 5.640 | 1.674 | 0.285 | 3.966 | 3.72R |
| 9 | 22.1 | 1.440 | -0.122 | 0.408 | 1.562 | 1.52 X |
| 23 | 14.5 | 3.760 | 1.171 | 0.158 | 2.589 | 2.37R |
| 35 | 17.9 | 3.500 | 0.597 | 0.193 | 2.903 | 2.67R |
| 36 | 13.9 | 3.670 | 1.279 | 0.178 | 2.391 | 2.19R |
| 43 | 22.7 | 0.050 | -0.229 | 0.444 | 0.279 | 0.28 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM3 = -0.348

SPEARMAN RANK Correlation = -0.380



The regression equation is
 NH4 = 3.28 - 0.144 cATM5

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.2756 | 0.9679 | 3.38 |
| cATM5 | -0.14398 | 0.05978 | -2.41 |

s = 1.124 R-sq = 9.0% R-sq(adj) = 7.4%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 7.331 | 7.331 |
| Error | 59 | 74.560 | 1.264 |
| Total | 60 | 81.891 | |

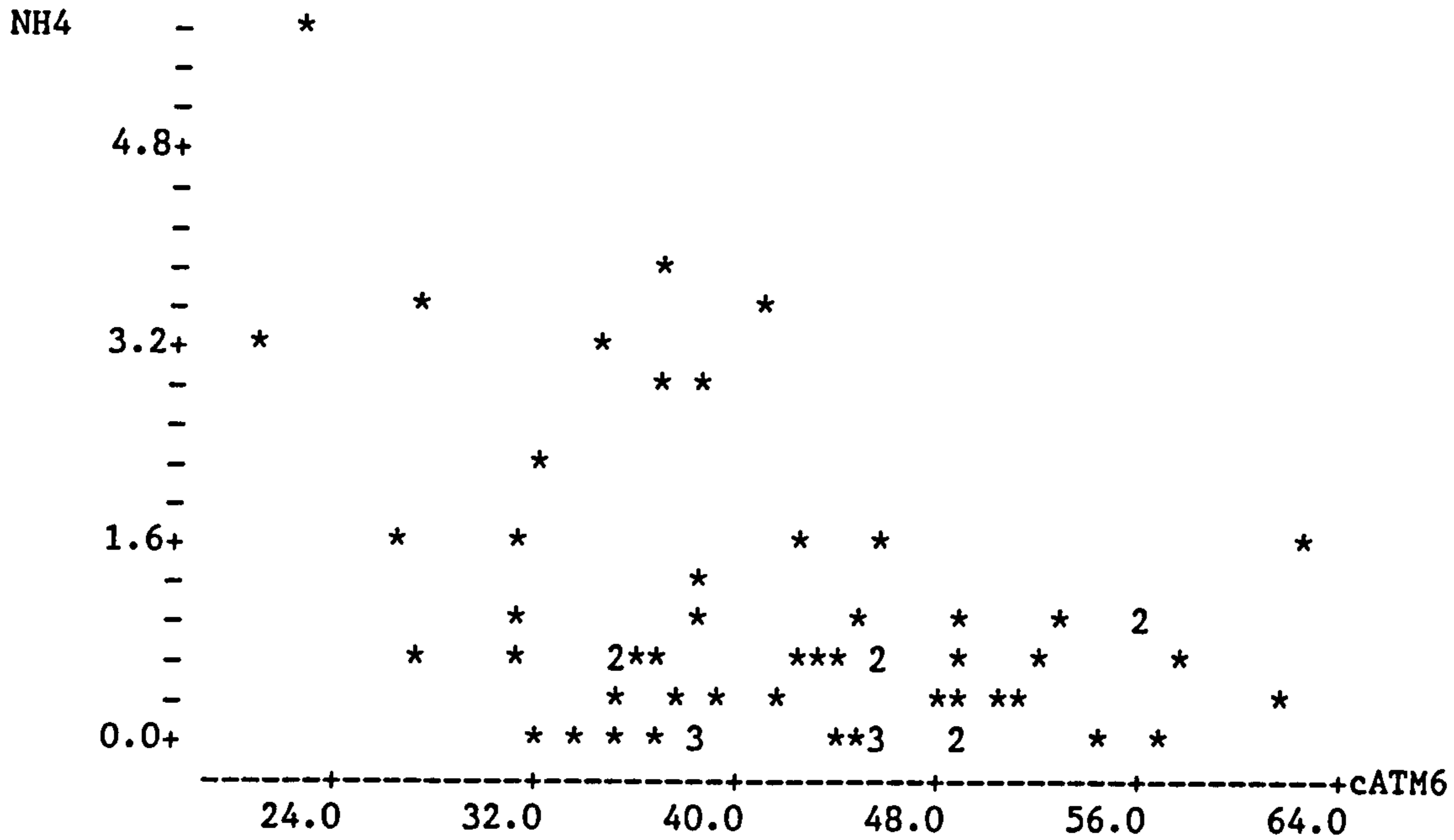
Unusual Observations

| Obs. | cATM5 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|--------|-----------|----------|----------|
| 6 | 11.6 | 5.640 | 1.607 | 0.301 | 4.033 | 3.72R |
| 9 | 21.5 | 1.440 | 0.181 | 0.358 | 1.259 | 1.18 X |
| 23 | 16.0 | 3.760 | 0.972 | 0.144 | 2.788 | 2.50R |
| 35 | 17.5 | 3.500 | 0.760 | 0.168 | 2.740 | 2.47R |
| 36 | 14.4 | 3.670 | 1.198 | 0.172 | 2.472 | 2.23R |
| 43 | 23.4 | 0.050 | -0.087 | 0.462 | 0.137 | 0.13 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM5 = -0.299

SPEARMAN RANK Correlation = -0.262



The regression equation is
 $NH4 = 3.27 - 0.0551 \text{ cATM6}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 3.2690 | 0.6309 | 5.18 |
| cATM6 | -0.05507 | 0.01476 | -3.73 |

$s = 1.060$ $R\text{-sq} = 19.1\%$ $R\text{-sq(adj)} = 17.7\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 15.631 | 15.631 |
| Error | 59 | 66.260 | 1.123 |
| Total | 60 | 81.891 | |

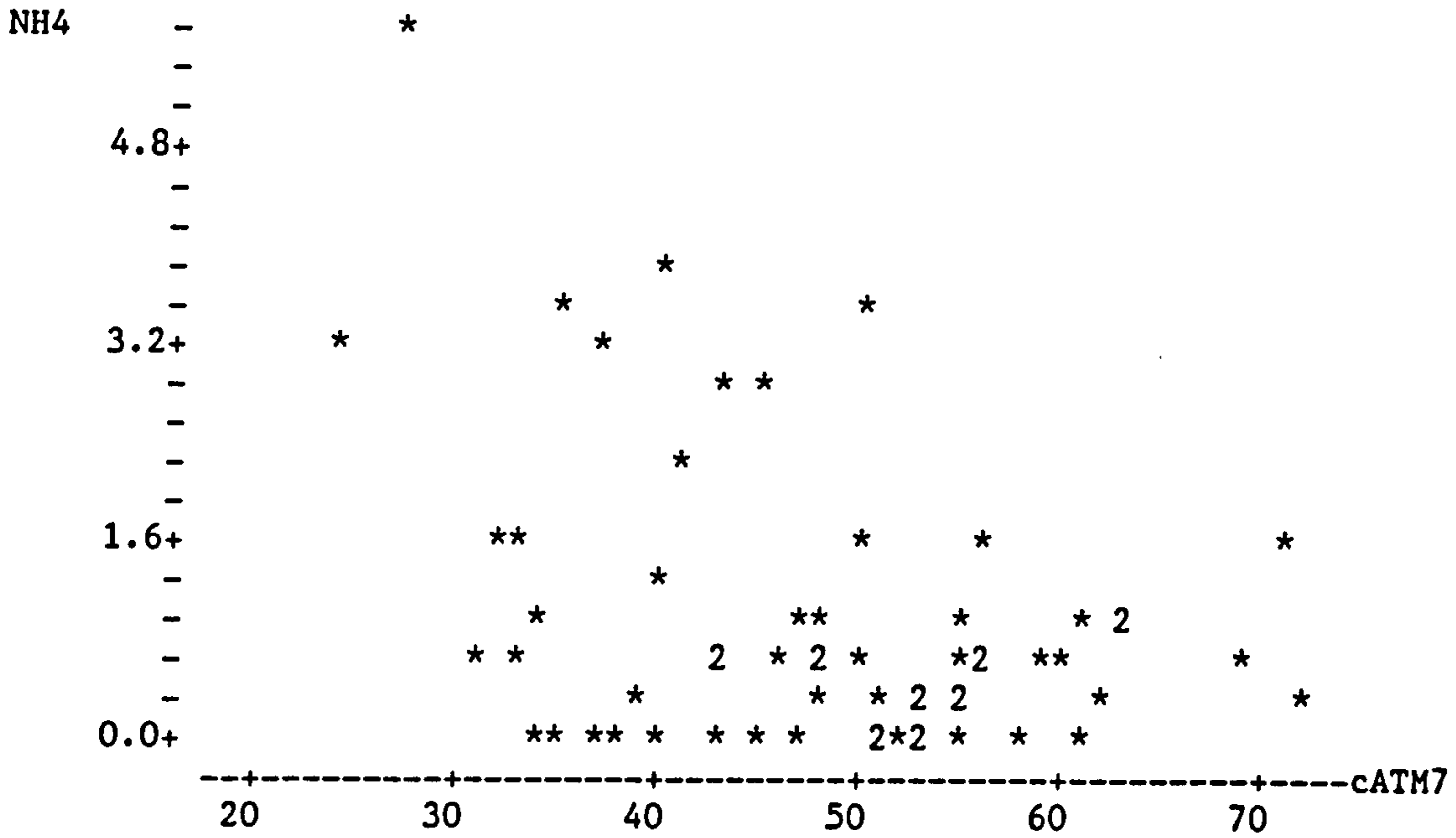
Unusual Observations

| Obs. | cATM6 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|--------|-----------|----------|----------|
| 3 | 20.8 | 3.210 | 2.123 | 0.338 | 1.087 | 1.08 X |
| 6 | 22.5 | 5.640 | 2.032 | 0.315 | 3.608 | 3.57R |
| 9 | 62.7 | 1.440 | -0.184 | 0.338 | 1.624 | 1.62 X |
| 23 | 37.1 | 3.760 | 1.226 | 0.152 | 2.534 | 2.42R |
| 35 | 40.8 | 3.500 | 1.021 | 0.136 | 2.479 | 2.36R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM6 = -0.437

SPEARMAN RANK Correlation = -0.301



The regression equation is
 $NH4 = 3.00 - 0.0422 \text{ cATM7}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 2.9997 | 0.6379 | 4.70 |
| cATM7 | -0.04220 | 0.01295 | -3.26 |

s = 1.085 R-sq = 15.3% R-sq(adj) = 13.8%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 12.497 | 12.497 |
| Error | 59 | 69.394 | 1.176 |
| Total | 60 | 81.891 | |

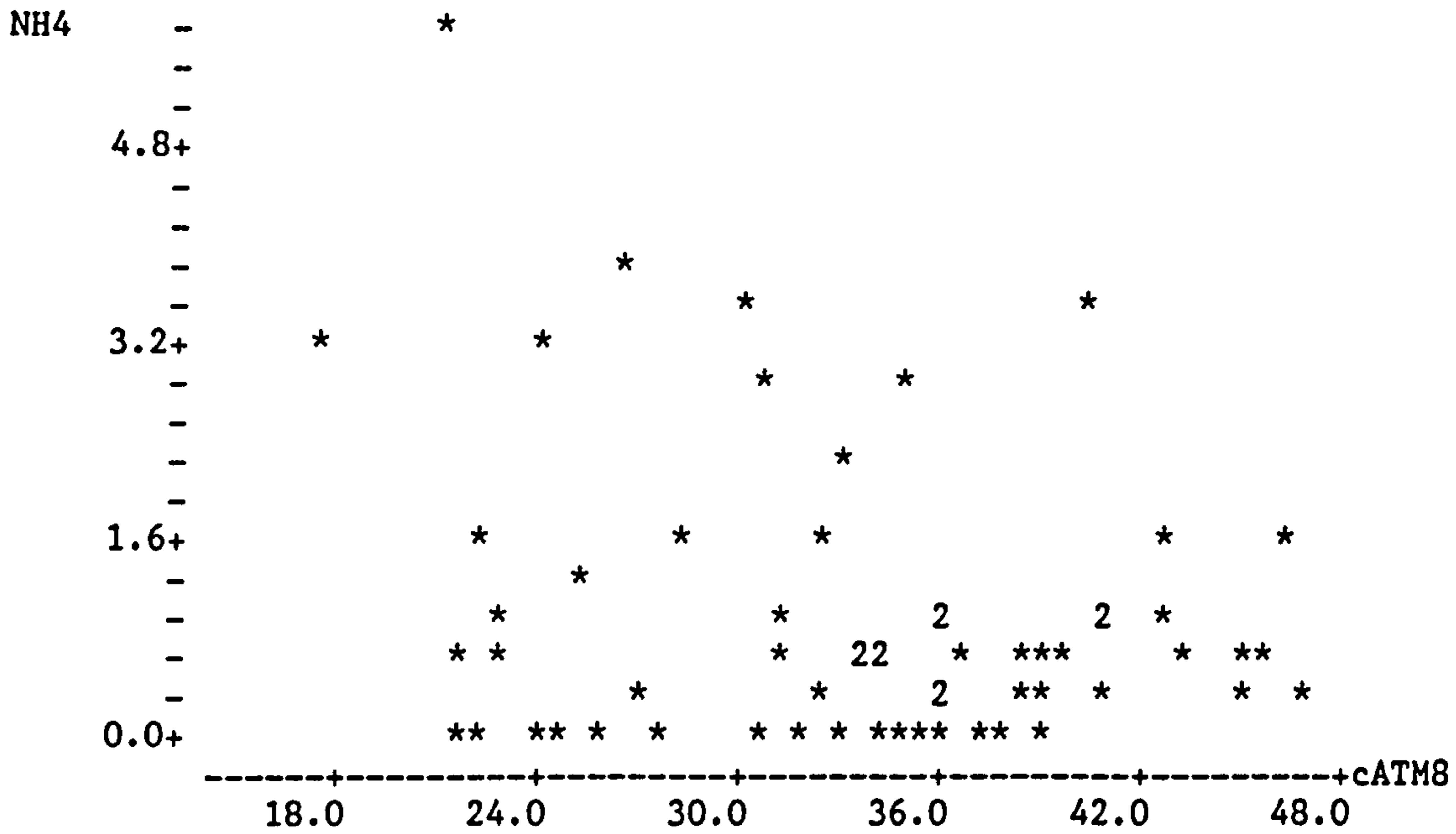
Unusual Observations

| Obs. | cATM7 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 3 | 23.7 | 3.210 | 1.998 | 0.345 | 1.212 | 1.18 X |
| 6 | 26.7 | 5.640 | 1.873 | 0.310 | 3.767 | 3.62R |
| 23 | 40.2 | 3.760 | 1.303 | 0.172 | 2.457 | 2.29R |
| 35 | 50.5 | 3.500 | 0.869 | 0.142 | 2.631 | 2.45R |
| 36 | 34.9 | 3.670 | 1.525 | 0.220 | 2.145 | 2.02R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM7 = -0.391

SPEARMAN RANK Correlation = -0.214



The regression equation is
 $NH4 = 2.39 - 0.0426 \text{ cATM8}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 2.3932 | 0.6816 | 3.51 |
| cATM8 | -0.04256 | 0.01992 | -2.14 |

$s = 1.135$ $R\text{-sq} = 7.2\%$ $R\text{-sq(adj)} = 5.6\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 5.881 | 5.881 |
| Error | 59 | 76.011 | 1.288 |
| Total | 60 | 81.891 | |

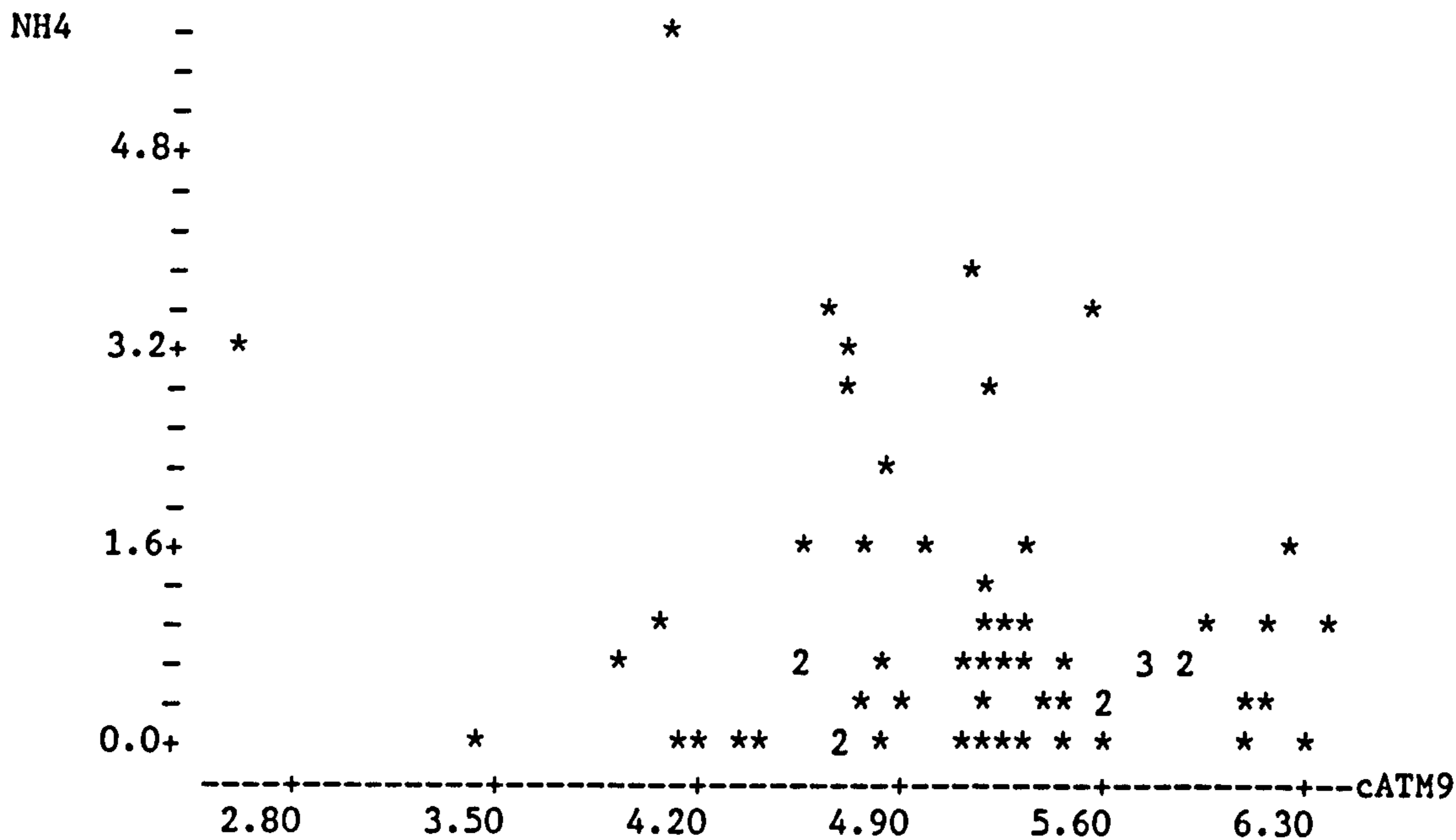
Unusual Observations

| Obs. | cATM8 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 21.0 | 5.640 | 1.501 | 0.288 | 4.139 | 3.77R |
| 23 | 26.5 | 3.760 | 1.267 | 0.201 | 2.493 | 2.23R |
| 35 | 40.1 | 3.500 | 0.688 | 0.196 | 2.812 | 2.52R |
| 36 | 30.1 | 3.670 | 1.113 | 0.160 | 2.557 | 2.28R |

R denotes an obs. with a large st. resid.

Correlation of NH4 and cATM8 = -0.268

SPEARMAN RANK Correlation = -0.083



The regression equation is
 $NH4 = 3.22 - 0.440 \text{ cATM9}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 3.220 | 1.054 | 3.06 |
| cATM9 | -0.4399 | 0.2041 | -2.16 |

s = 1.134 R-sq = 7.3% R-sq(adj) = 5.7%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 5.976 | 5.976 |
| Error | 59 | 75.916 | 1.287 |
| Total | 60 | 81.891 | |

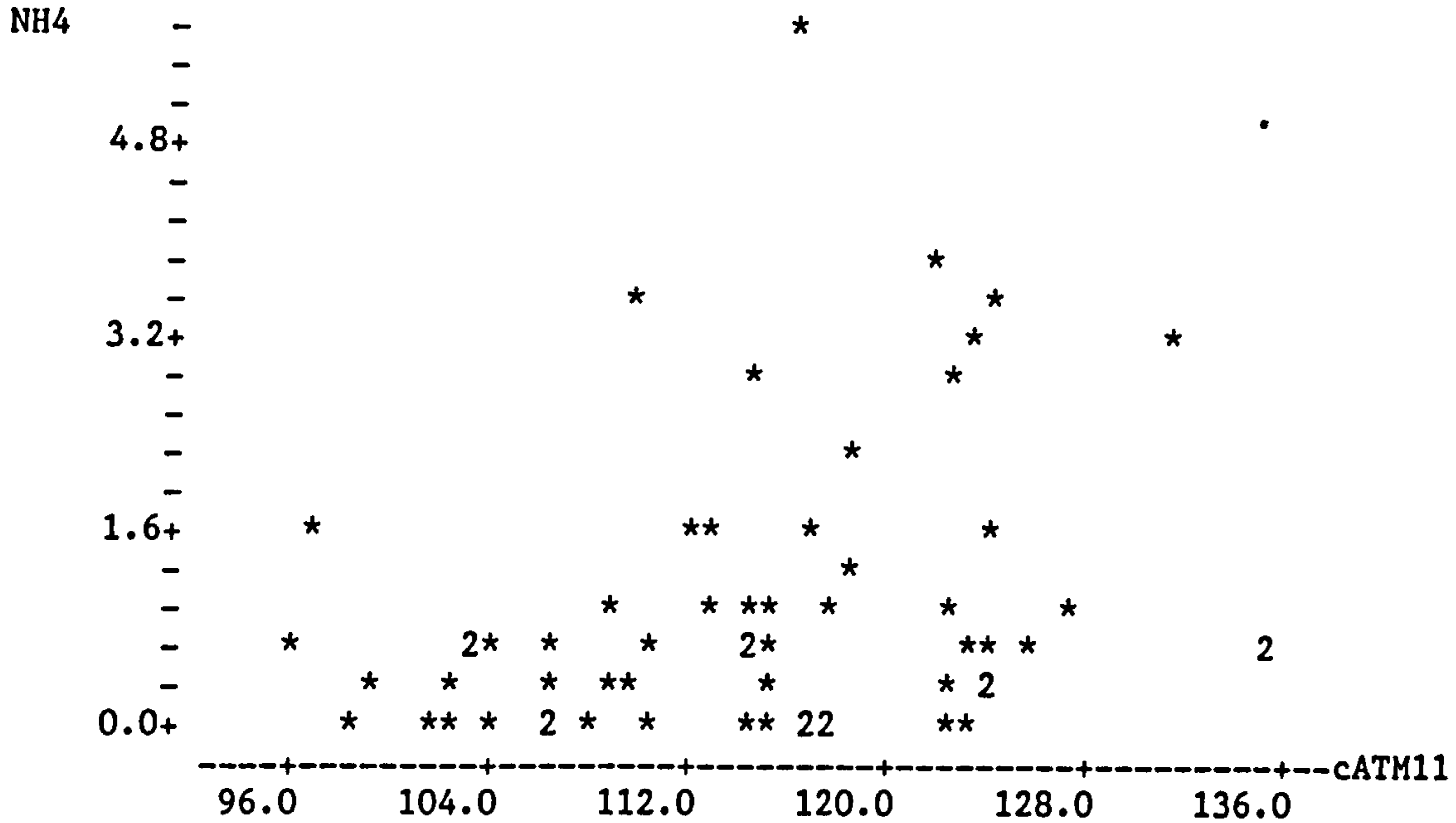
Unusual Observations

| Obs. | cATM9 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 3 | 2.62 | 3.210 | 2.069 | 0.530 | 1.141 | 1.14 X |
| 6 | 4.06 | 5.640 | 1.434 | 0.259 | 4.206 | 3.81R |
| 23 | 5.12 | 3.760 | 0.967 | 0.145 | 2.793 | 2.48R |
| 35 | 5.55 | 3.500 | 0.778 | 0.171 | 2.722 | 2.43R |
| 36 | 4.60 | 3.670 | 1.195 | 0.179 | 2.475 | 2.21R |
| 47 | 3.43 | 0.110 | 1.712 | 0.373 | -1.602 | -1.50 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM9 = -0.270

SPEARMAN RANK Correlation = -0.096



The regression equation is
 $NH4 = -2.81 + 0.0330 \text{ cATM11}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -2.813 | 1.849 | -1.52 |
| cATM11 | 0.03303 | 0.01609 | 2.05 |

s = 1.138 R-sq = 6.7% R-sq(adj) = 5.1%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 1 | 5.457 | 5.457 |
| Error | 59 | 76.434 | 1.295 |
| Total | 60 | 81.891 | |

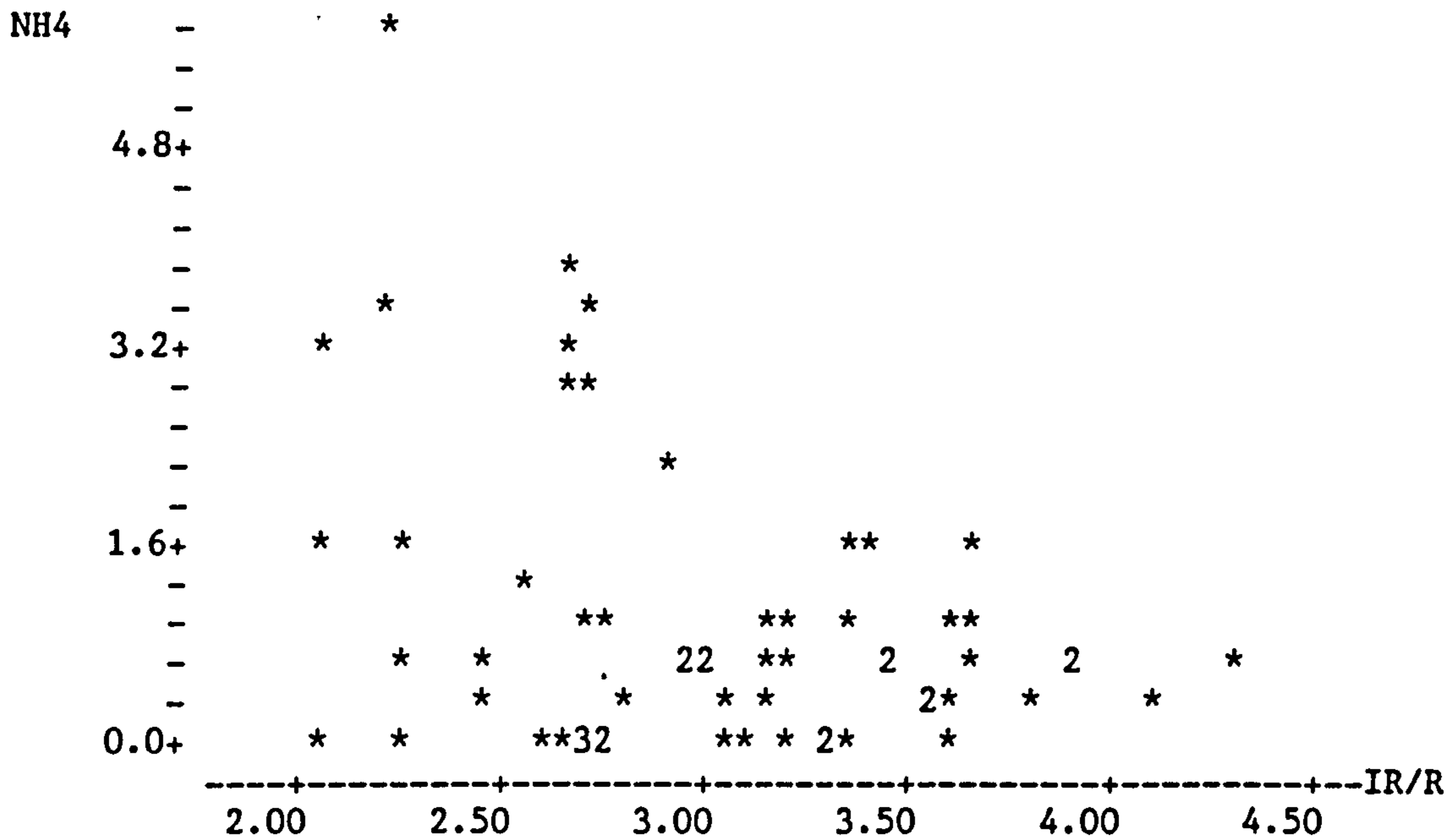
Unusual Observations

| Obs. | cATM11 | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|-------|-------|-----------|----------|----------|
| 6 | 116 | 5.640 | 1.026 | 0.148 | 4.614 | 4.09R |
| 18 | 135 | 0.480 | 1.654 | 0.364 | -1.174 | -1.09 X |
| 23 | 122 | 3.760 | 1.200 | 0.184 | 2.560 | 2.28R |
| 35 | 109 | 3.500 | 0.795 | 0.169 | 2.705 | 2.40R |
| 36 | 124 | 3.670 | 1.282 | 0.211 | 2.388 | 2.13R |
| 57 | 135 | 0.710 | 1.654 | 0.364 | -0.944 | -0.88 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and cATM11 = 0.258

SPEARMAN RANK Correlation = 0.281



The regression equation is
 $NH4 = 3.40 - 0.805 IR/R$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 3.3986 | 0.8056 | 4.22 |
| IR/R | -0.8053 | 0.2631 | -3.06 |

s = 1.094 R-sq = 13.7% R-sq(adj) = 12.2%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 11.221 | 11.221 |
| Error | 59 | 70.670 | 1.198 |
| Total | 60 | 81.891 | |

Unusual Observations

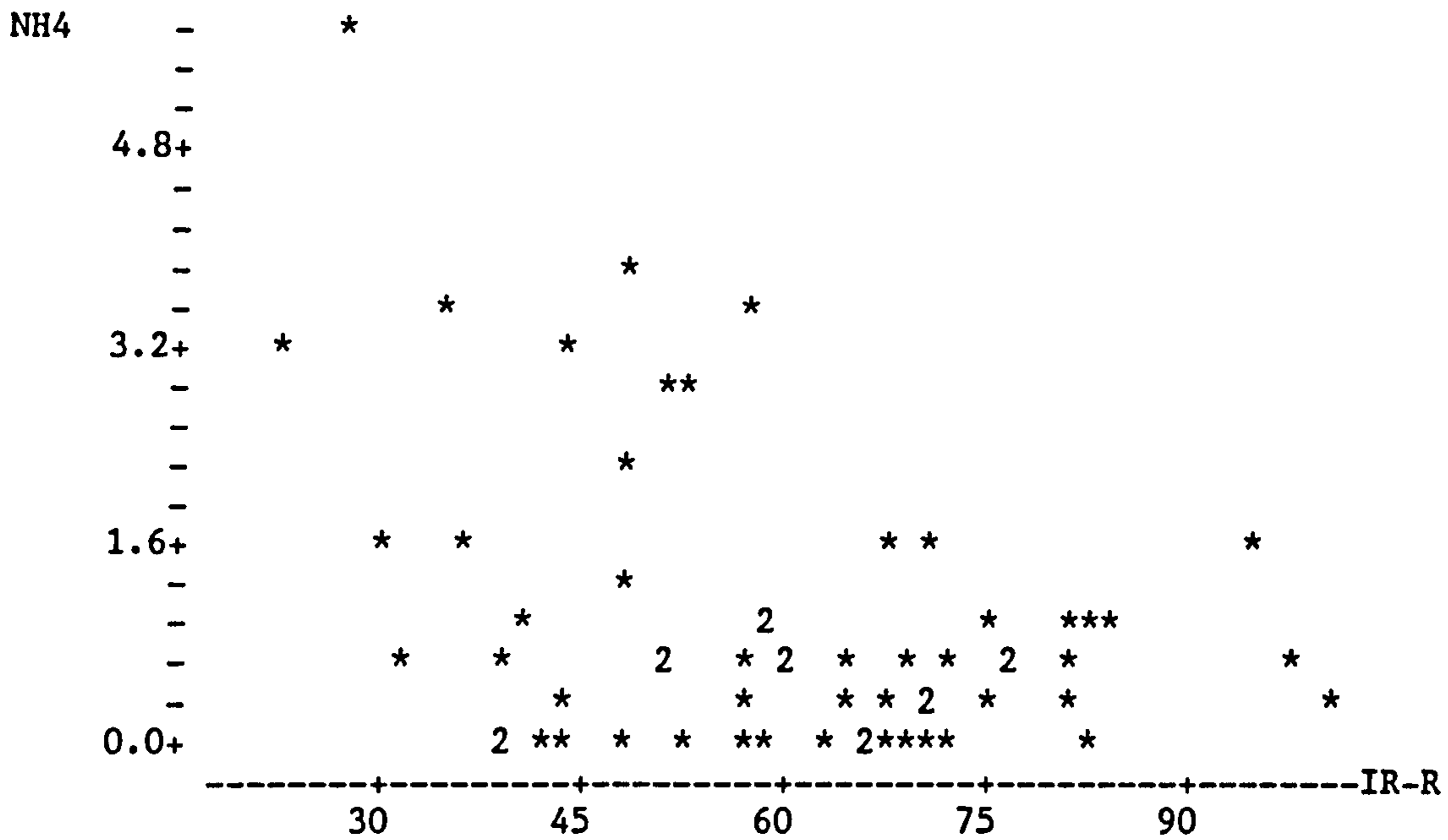
| Obs. | IR/R | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|--------|-----------|----------|----------|
| 6 | 2.18 | 5.640 | 1.640 | 0.260 | 4.000 | 3.76R |
| 23 | 2.64 | 3.760 | 1.273 | 0.172 | 2.487 | 2.30R |
| 35 | 2.68 | 3.500 | 1.237 | 0.165 | 2.263 | 2.09R |
| 61 | 4.31 | 0.530 | -0.070 | 0.368 | 0.600 | 0.58 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and IR/R = -0.370

SPEARMAN RANK Correlation = -0.172



The regression equation is
 NH4 = 2.60 - 0.0272 IR-R

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 2.6038 | 0.4938 | 5.27 |
| IR-R | -0.027199 | 0.007896 | -3.44 |

s = 1.075 R-sq = 16.7% R-sq(adj) = 15.3%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 13.711 | 13.711 |
| Error | 59 | 68.180 | 1.156 |
| Total | 60 | 81.891 | |

Unusual Observations

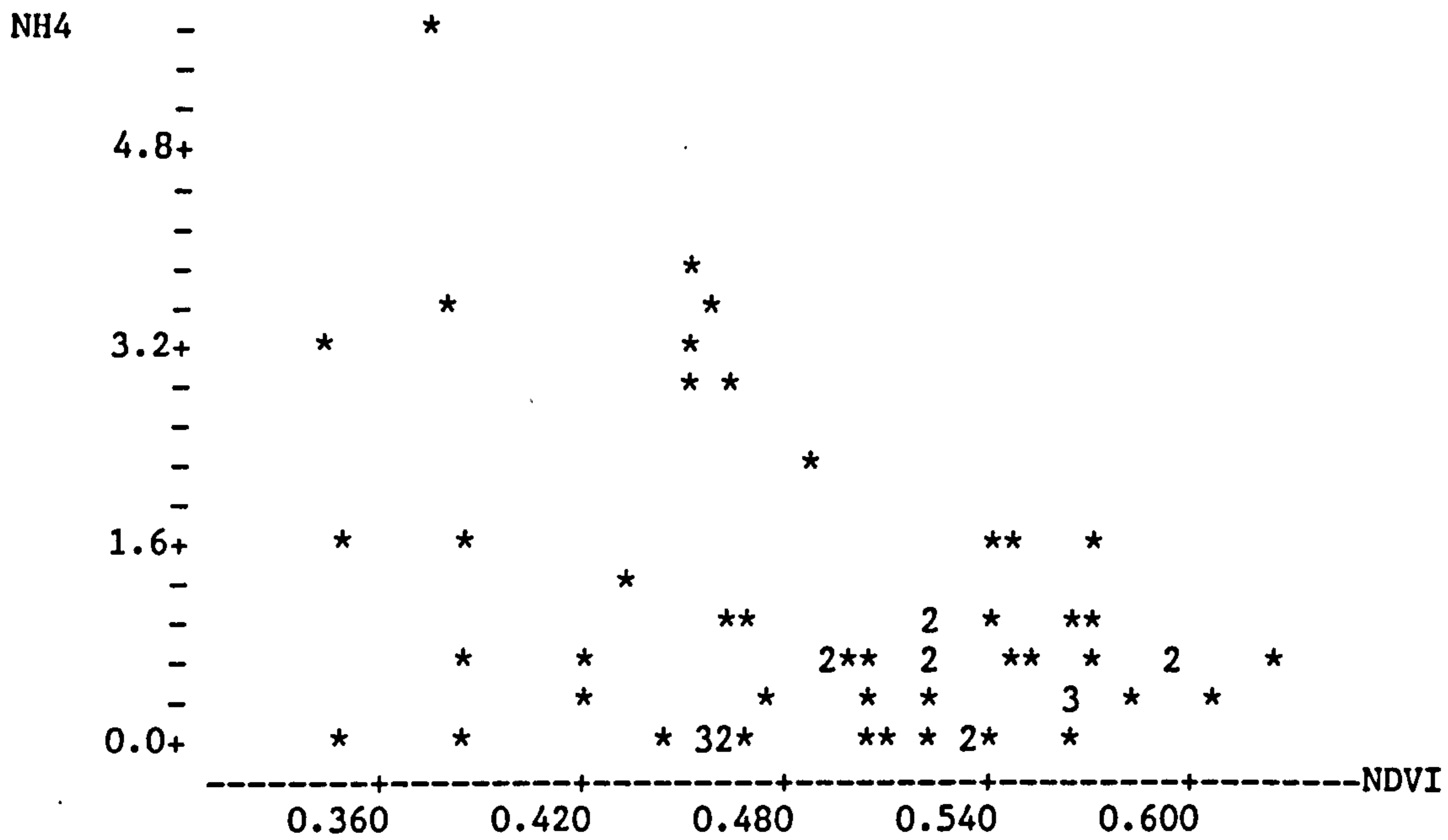
| Obs. | IR-R | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|--------|-----------|----------|----------|
| 6 | 27 | 5.640 | 1.879 | 0.298 | 3.761 | 3.64R |
| 23 | 48 | 3.760 | 1.298 | 0.167 | 2.462 | 2.32R |
| 28 | 101 | 0.220 | -0.143 | 0.351 | 0.363 | 0.36 X |
| 35 | 57 | 3.500 | 1.045 | 0.139 | 2.455 | 2.30R |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of NH4 and IR-R = -0.409

SPEARMAN RANK Correlation = -0.214



The regression equation is
 $NH4 = 4.25 - 6.66 NDVI$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | 4.251 | 1.008 | 4.22 |
| NDVI | -6.656 | 2.026 | -3.28 |

s = 1.083 R-sq = 15.5% R-sq(adj) = 14.0%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|--------|
| Regression | 1 | 12.660 | 12.660 |
| Error | 59 | 69.231 | 1.173 |
| Total | 60 | 81.891 | |

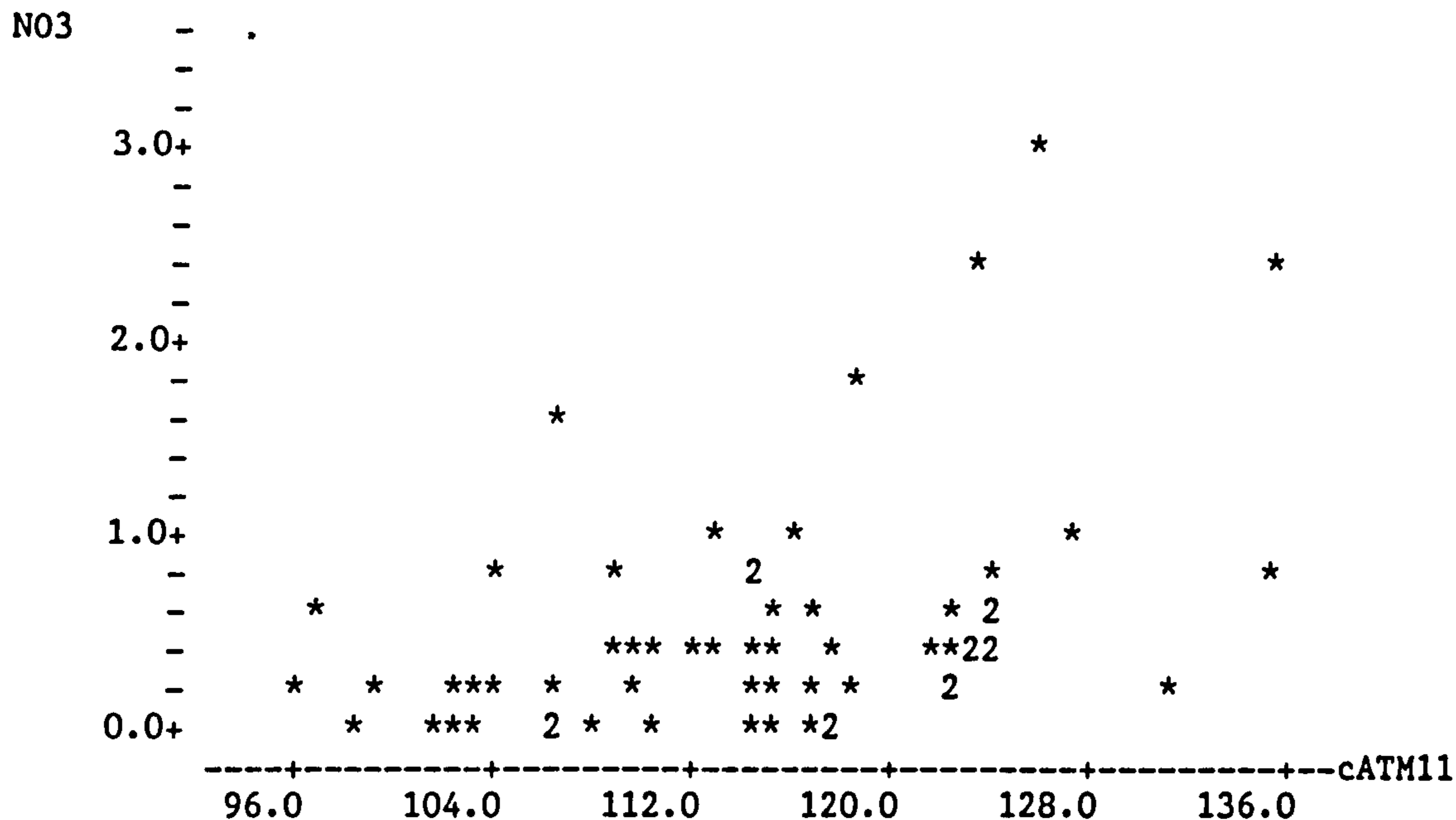
Unusual Observations

| Obs. | NDVI | NH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 6 | 0.372 | 5.640 | 1.777 | 0.282 | 3.863 | 3.69R |
| 23 | 0.450 | 3.760 | 1.253 | 0.163 | 2.507 | 2.34R |
| 35 | 0.457 | 3.500 | 1.208 | 0.156 | 2.292 | 2.14R |

R denotes an obs. with a large st. resid.

Correlation of NH4 and NDVI = -0.393

SPEARMAN RANK Correlation = -0.172



The regression equation is
 NO3 = - 2.43 + 0.0256 cATM11

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -2.4257 | 0.9271 | -2.62 |
| cATM11 | 0.025622 | 0.008068 | 3.18 |

s = 0.5706 R-sq = 14.6% R-sq(adj) = 13.1%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 1 | 3.2836 | 3.2836 |
| Error | 59 | 19.2108 | 0.3256 |
| Total | 60 | 22.4944 | |

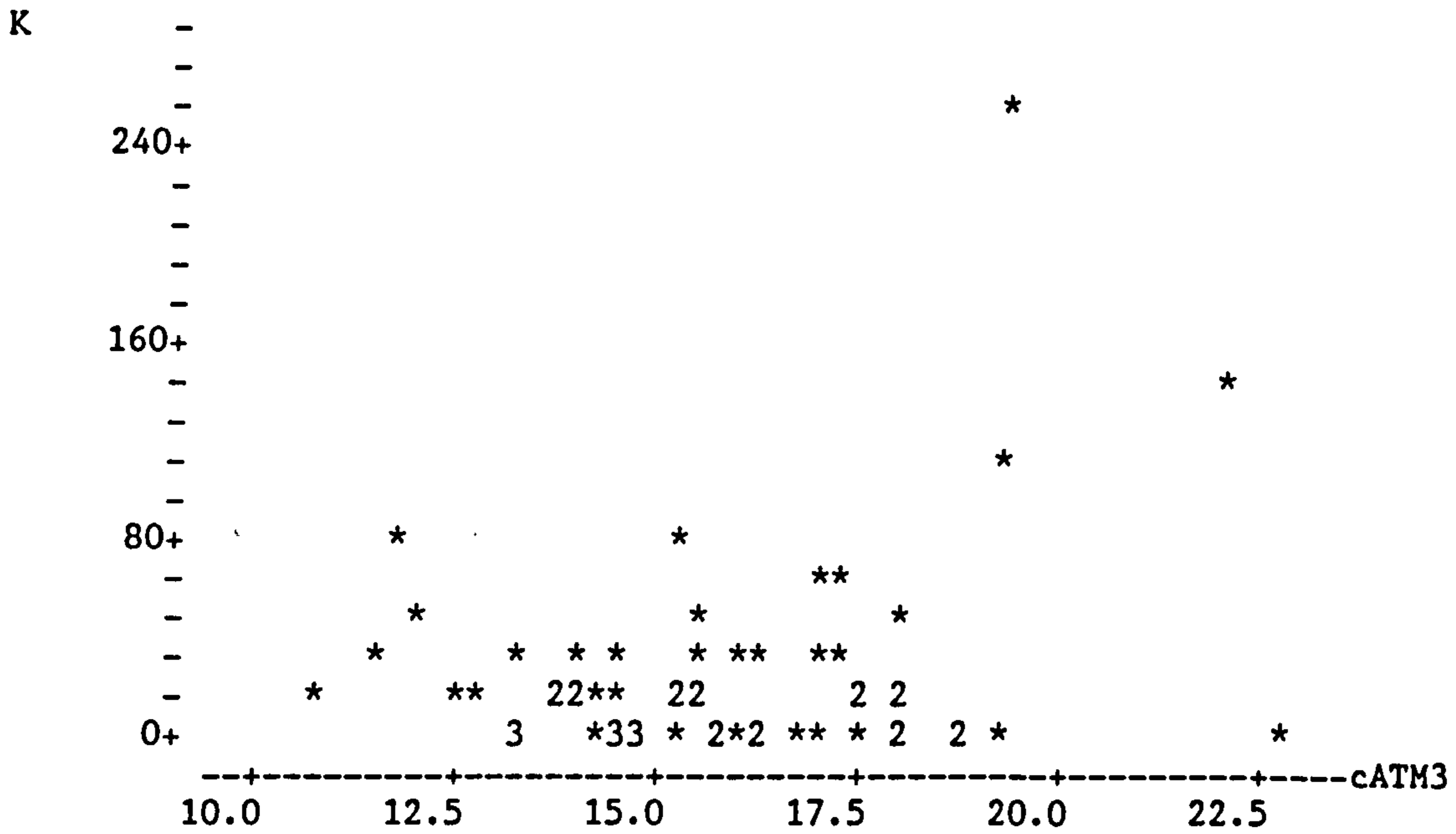
Unusual Observations

| Obs. | cATM11 | NO3 | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|--------|-----------|----------|----------|
| 1 | 126 | 3.0800 | 0.7898 | 0.1146 | 2.2902 | 4.10R |
| 13 | 124 | 2.4800 | 0.7386 | 0.1027 | 1.7414 | 3.10R |
| 18 | 135 | 2.3300 | 1.0396 | 0.1823 | 1.2904 | 2.39RX |
| 22 | 118 | 1.8100 | 0.5977 | 0.0782 | 1.2123 | 2.14R |
| 30 | 106 | 1.6900 | 0.2966 | 0.0991 | 1.3934 | 2.48R |
| 57 | 135 | 0.8300 | 1.0396 | 0.1823 | -0.2096 | -0.39 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of NO3 and cATM11 = 0.382

SPEARMAN RANK Correlation = 0.389



The regression equation is
 $K = -47.0 + 4.66 \text{ cATM3}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -47.03 | 34.56 | -1.36 |
| cATM3 | 4.659 | 2.176 | 2.14 |

s = 39.98 R-sq = 7.2% R-sq(adj) = 5.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 7332 | 7332 |
| Error | 59 | 94315 | 1599 |
| Total | 60 | 101647 | |

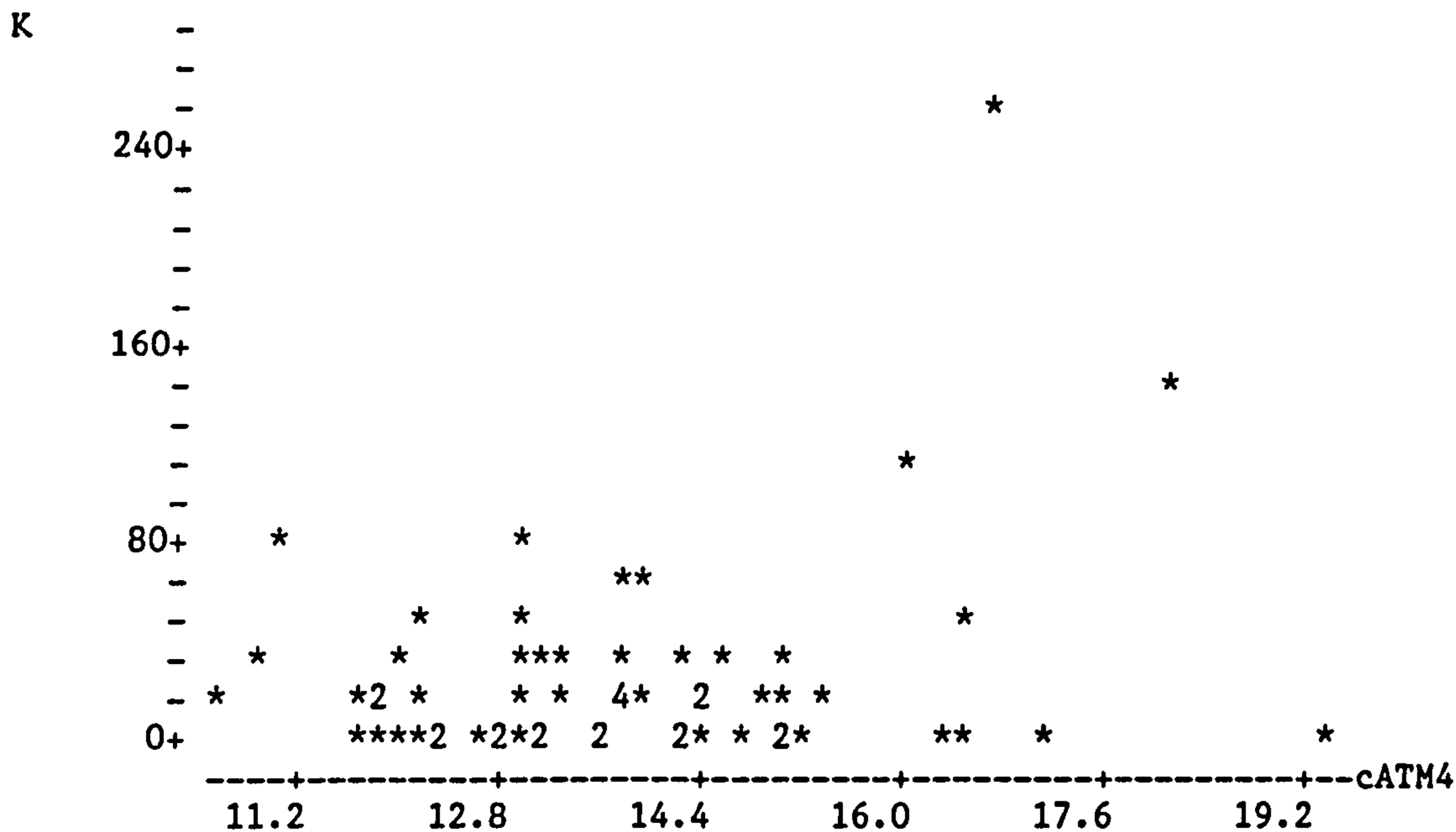
Unusual Observations

| Obs. | cATM3 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 9 | 22.1 | 141.00 | 55.86 | 14.78 | 85.14 | 2.29RX |
| 12 | 19.1 | 259.00 | 42.18 | 9.06 | 216.82 | 5.57R |
| 43 | 22.7 | 1.00 | 58.79 | 16.07 | -57.79 | -1.58 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM3 = 0.269

SPEARMAN RANK Correlation = -0.064



The regression equation is
 $K = - 58.7 + 6.17 \text{ cATM4}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -58.70 | 41.26 | -1.42 |
| cATM4 | 6.166 | 2.975 | 2.07 |

s = 40.07 R-sq = 6.8% R-sq(adj) = 5.2%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 6900 | 6900 |
| Error | 59 | 94748 | 1606 |
| Total | 60 | 101647 | |

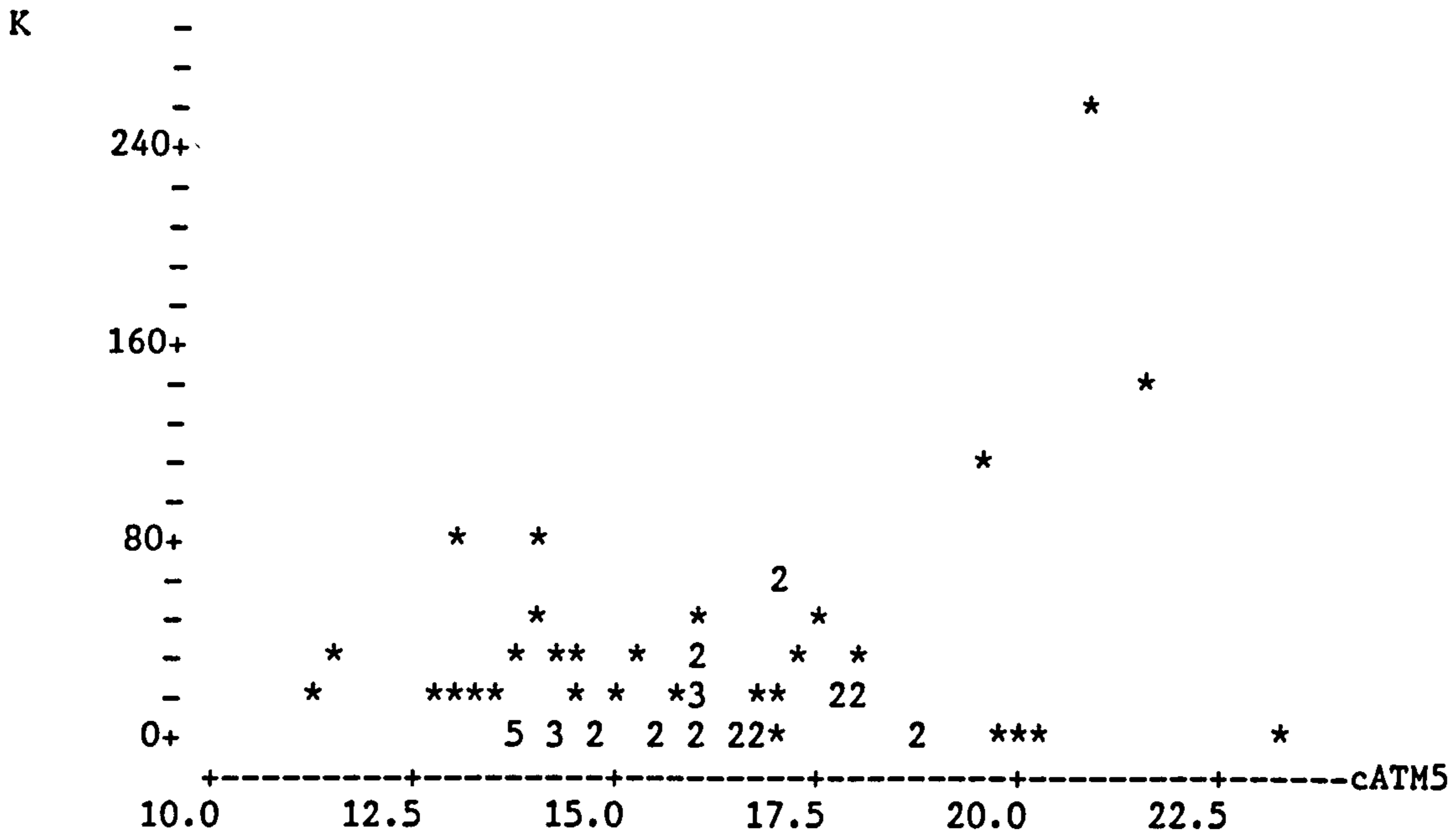
Unusual Observations

| Obs. | cATM4 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 9 | 18.1 | 141.00 | 52.99 | 13.92 | 88.01 | 2.34RX |
| 12 | 16.6 | 259.00 | 43.88 | 9.97 | 215.12 | 5.54R |
| 43 | 19.3 | 1.00 | 60.28 | 17.24 | -59.28 | -1.64 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM4 = 0.261

SPEARMAN RANK Correlation = -0.043



The regression equation is
 $K = - 51.7 + 4.86 \text{ cATM5}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -51.71 | 34.24 | -1.51 |
| cATM5 | 4.863 | 2.114 | 2.30 |

s = 39.76 R-sq = 8.2% R-sq(adj) = 6.7%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 8365 | 8365 |
| Error | 59 | 93282 | 1581 |
| Total | 60 | 101647 | |

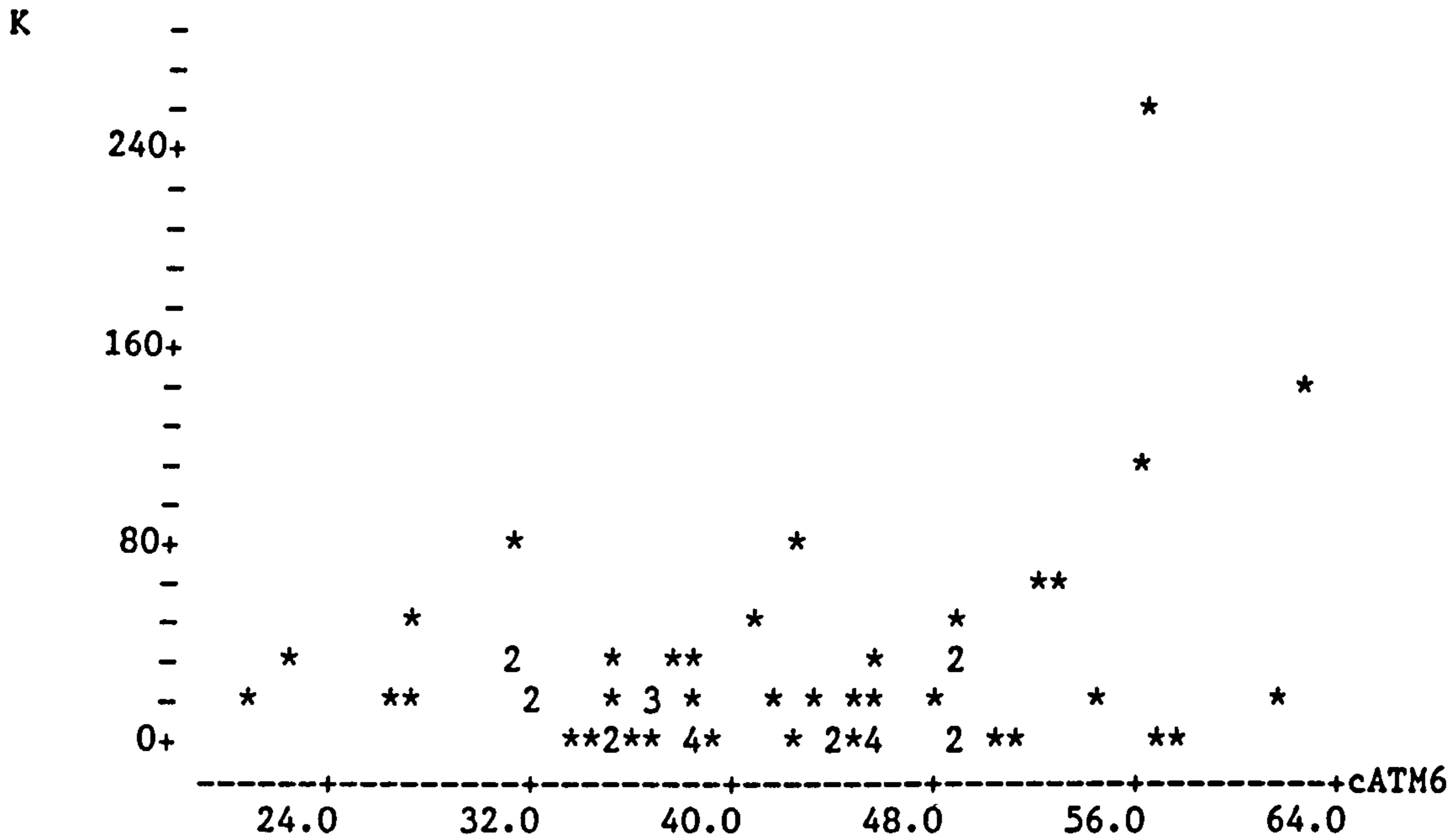
Unusual Observations

| Obs. | cATM5 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 9 | 21.5 | 141.00 | 52.82 | 12.66 | 88.18 | 2.34RX |
| 12 | 20.8 | 259.00 | 49.48 | 11.34 | 209.52 | 5.50R |
| 43 | 23.4 | 1.00 | 61.88 | 16.34 | -60.88 | -1.68 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM5 = 0.287

SPEARMAN RANK Correlation = -0.034



The regression equation is
 $K = - 29.0 + 1.32 \text{ cATM6}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -29.04 | 23.59 | -1.23 |
| cATM6 | 1.3224 | 0.5519 | 2.40 |

s = 39.62 R-sq = 8.9% R-sq(adj) = 7.3%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 9015 | 9015 |
| Error | 59 | 92633 | 1570 |
| Total | 60 | 101647 | |

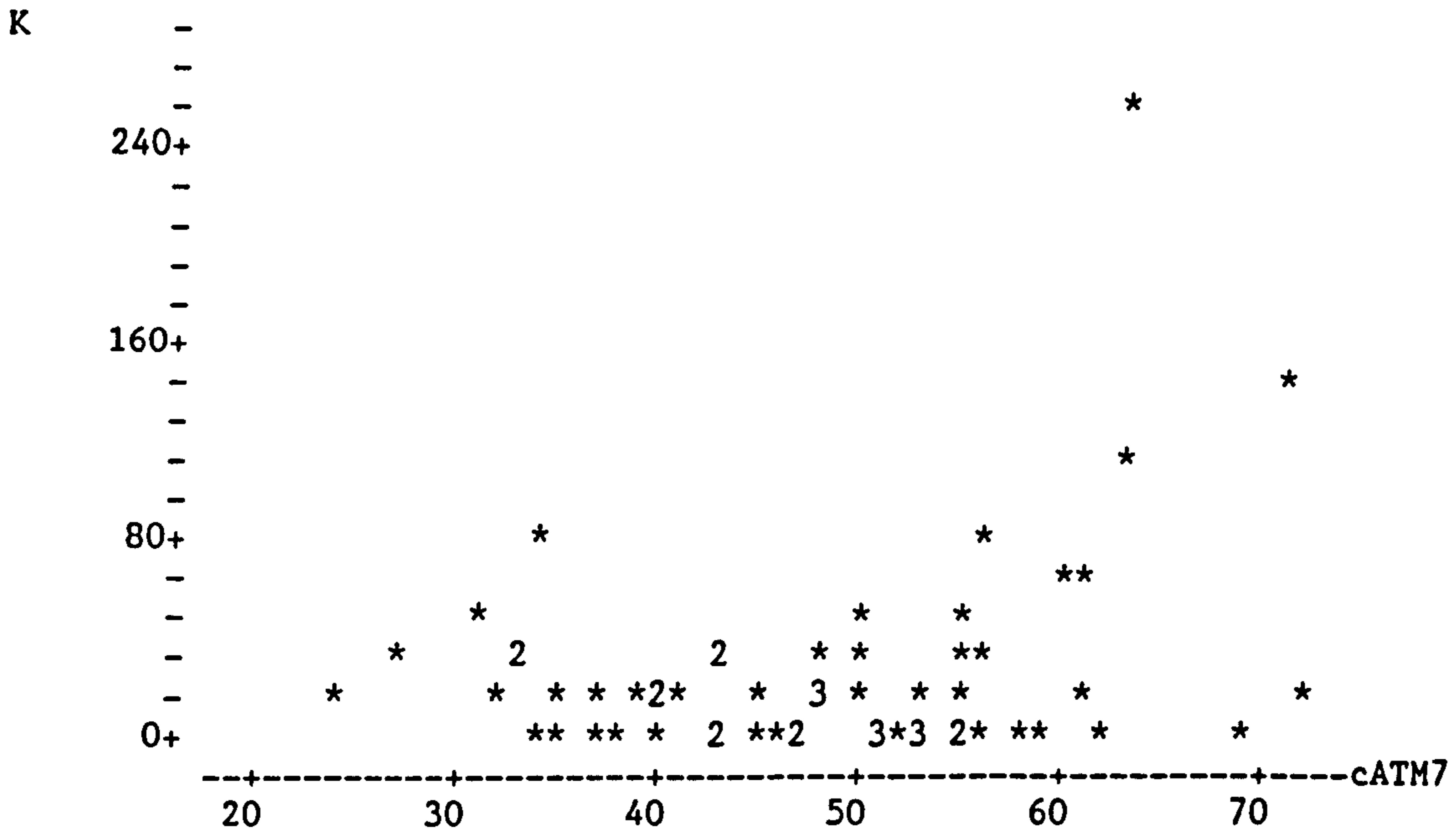
Unusual Observations

| Obs. | cATM6 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 3 | 20.8 | 9.20 | -1.52 | 12.62 | 10.72 | 0.29 X |
| 9 | 62.7 | 141.00 | 53.87 | 12.63 | 87.13 | 2.32RX |
| 12 | 55.7 | 259.00 | 44.59 | 9.21 | 214.41 | 5.56R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM6 = 0.298

SPEARMAN RANK Correlation = -0.005



The regression equation is
 $K = - 26.7 + 1.10 \text{ cATM7}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -26.73 | 23.37 | -1.14 |
| cATM7 | 1.1000 | 0.4743 | 2.32 |

$s = 39.74$ $R\text{-sq} = 8.4\%$ $R\text{-sq(adj)} = 6.8\%$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 8491 | 8491 |
| Error | 59 | 93156 | 1579 |
| Total | 60 | 101647 | |

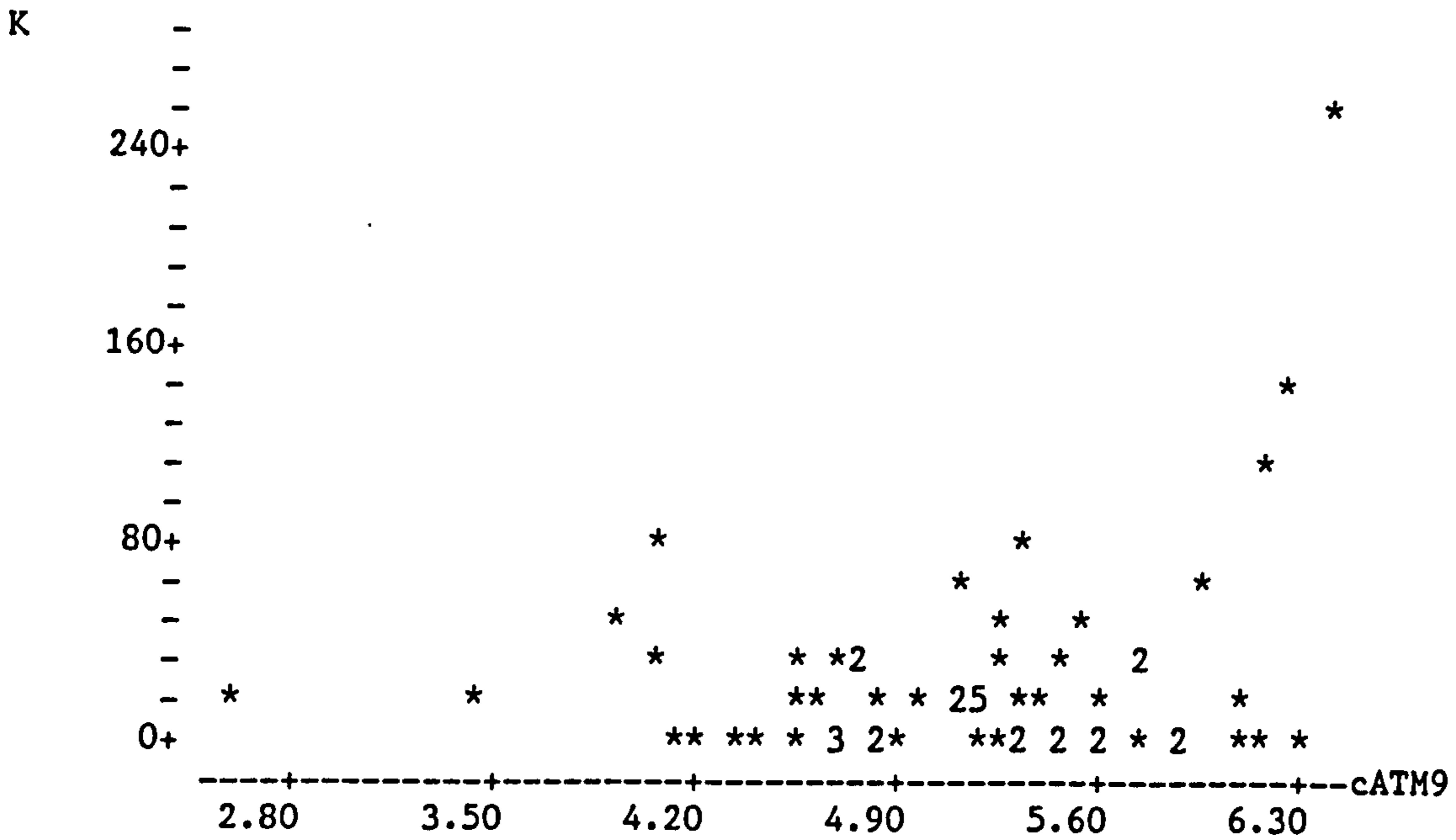
Unusual Observations

| Obs. | cATM7 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 3 | 23.7 | 9.20 | -0.63 | 12.62 | 9.83 | 0.26 X |
| 9 | 71.1 | 141.00 | 51.44 | 12.03 | 89.56 | 2.36R |
| 12 | 62.8 | 259.00 | 42.39 | 8.65 | 216.61 | 5.59R |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM7 = 0.289

SPEARMAN RANK Correlation = 0.058



The regression equation is
 $K = - 52.4 + 15.4 \text{ cATM9}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -52.44 | 37.16 | -1.41 |
| cATM9 | 15.370 | 7.196 | 2.14 |

s = 39.99 R-sq = 7.2% R-sq(adj) = 5.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 7296 | 7296 |
| Error | 59 | 94352 | 1599 |
| Total | 60 | 101647 | |

Unusual Observations

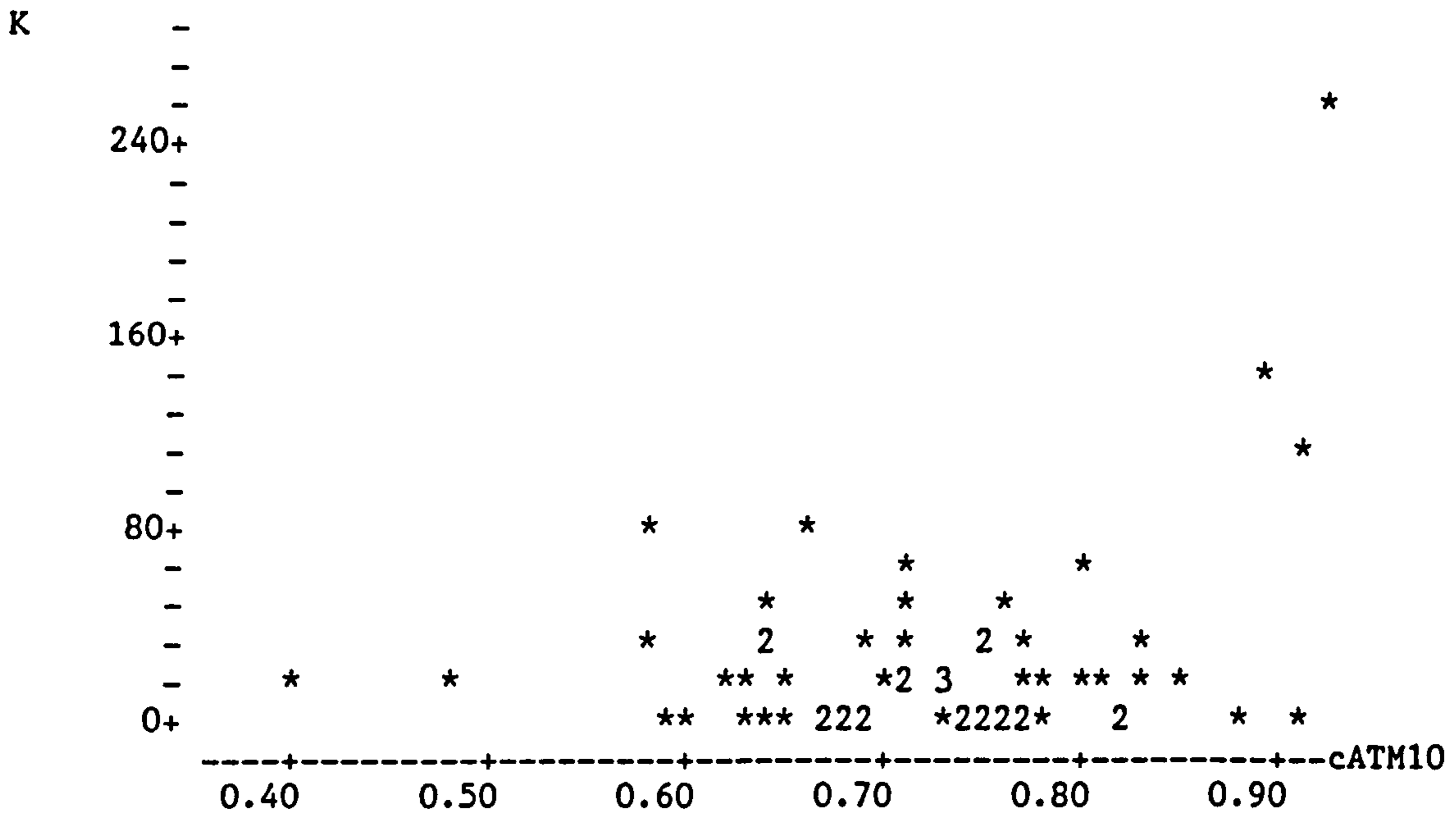
| Obs. | cATM9 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 3 | 2.62 | 9.20 | -12.24 | 18.69 | 21.44 | 0.61 X |
| 9 | 6.23 | 141.00 | 43.30 | 9.52 | 97.70 | 2.52R |
| 12 | 6.34 | 259.00 | 45.04 | 10.21 | 213.96 | 5.53R |
| 47 | 3.43 | 17.00 | 0.26 | 13.16 | 16.74 | 0.44 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM9 = 0.268

SPEARMAN RANK Correlation = 0.008



The regression equation is
 $K = - 61.9 + 122 \text{ cATM10}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|-------|---------|
| Constant | -61.87 | 38.00 | -1.63 |
| cATM10 | 121.89 | 52.15 | 2.34 |

s = 39.71 R-sq = 8.5% R-sq(adj) = 6.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 8615 | 8615 |
| Error | 59 | 93033 | 1577 |
| Total | 60 | 101647 | |

Unusual Observations

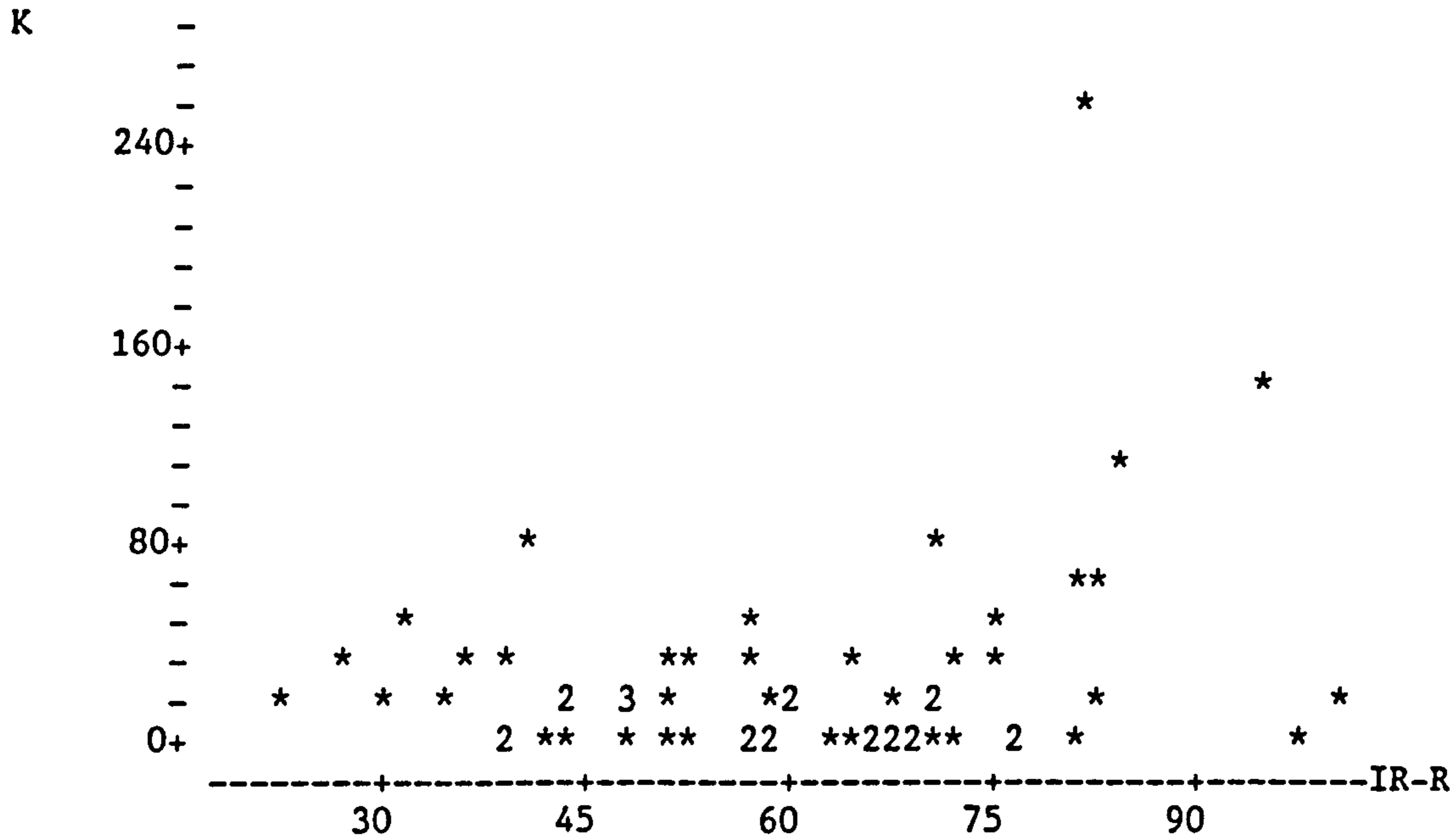
| Obs. | cATM10 | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|--------|--------|--------|-----------|----------|----------|
| 3 | 0.397 | 9.20 | -13.48 | 17.71 | 22.68 | 0.64 X |
| 9 | 0.889 | 141.00 | 46.47 | 10.07 | 94.53 | 2.46R |
| 12 | 0.916 | 259.00 | 49.80 | 11.32 | 209.20 | 5.50R |
| 47 | 0.484 | 17.00 | -2.82 | 13.40 | 19.82 | 0.53 X |

R denotes an obs. with a large st. resid.

X denotes an obs. whose X value gives it large influence.

Correlation of K and cATM10 = 0.291

SPEARMAN RANK Correlation = -0.011



The regression equation is
 $K = - 11.7 + 0.631 \text{ IR-R}$

| Predictor | Coef | Stdev | t-ratio |
|-----------|--------|--------|---------|
| Constant | -11.74 | 18.36 | -0.64 |
| IR-R | 0.6311 | 0.2936 | 2.15 |

s = 39.97 R-sq = 7.3% R-sq(adj) = 5.7%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 1 | 7382 | 7382 |
| Error | 59 | 94265 | 1598 |
| Total | 60 | 101647 | |

Unusual Observations

| Obs. | IR-R | K | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|-------|-----------|----------|----------|
| 9 | 94 | 141.00 | 47.68 | 11.24 | 93.32 | 2.43R |
| 12 | 81 | 259.00 | 39.43 | 8.02 | 219.57 | 5.61R |
| 28 | 101 | 16.20 | 51.99 | 13.06 | -35.79 | -0.95 X |

R denotes an obs. with a large st. resid.
 X denotes an obs. whose X value gives it large influence.

Correlation of K and IR-R = 0.269

SPEARMAN RANK Correlation = 0.068

APPENDIX 5

CRYMLYN BOG STUDY

**RELATING AIRBORNE SCANNER DATA
TO FIELD-MEASURED VARIABLES**

**MULTIVARIATE LINEAR REGRESSION RESULTS
QUADRAT SAMPLES**

The regression equation is

$$\begin{aligned} \text{QpH} = & 29.5 + 0.053 \text{ ATM1} - 0.747 \text{ ATM2} + 1.12 \text{ ATM3} - 3.64 \text{ ATM4} + 1.27 \text{ ATM5} \\ & - 0.103 \text{ ATM6} + 0.295 \text{ ATM7} + 0.293 \text{ ATM8} + 0.33 \text{ ATM9} - 2.29 \text{ ATM10} \\ & - 0.0269 \text{ ATM11} - 14.6 \text{ QIR/R} + 47.2 \text{ QNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 29.45 | 11.28 | 2.61 |
| ATM1 | 0.0534 | 0.3028 | 0.18 |
| ATM2 | -0.7468 | 0.5675 | -1.32 |
| ATM3 | 1.1245 | 0.5950 | 1.89 |
| ATM4 | -3.643 | 1.276 | -2.85 |
| ATM5 | 1.2712 | 0.8763 | 1.45 |
| ATM6 | -0.1034 | 0.4382 | -0.24 |
| ATM7 | 0.2950 | 0.5409 | 0.55 |
| ATM8 | 0.2926 | 0.4446 | 0.66 |
| ATM9 | 0.331 | 1.162 | 0.28 |
| ATM10 | -2.293 | 6.619 | -0.35 |
| ATM11 | -0.02694 | 0.03001 | -0.90 |
| QIR/R | -14.582 | 5.781 | -2.52 |
| QNDVI | 47.20 | 23.27 | 2.03 |

s = 0.8726 R-sq = 56.5% R-sq(adj) = 31.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 22.7268 | 1.7482 |
| Error | 23 | 17.5128 | 0.7614 |
| Total | 36 | 40.2396 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| ATM1 | 1 | 5.1998 |
| ATM2 | 1 | 0.6731 |
| ATM3 | 1 | 4.5173 |
| ATM4 | 1 | 2.5320 |
| ATM5 | 1 | 1.0190 |
| ATM6 | 1 | 0.0891 |
| ATM7 | 1 | 3.6982 |
| ATM8 | 1 | 0.0633 |
| ATM9 | 1 | 0.0211 |
| ATM10 | 1 | 0.0515 |
| ATM11 | 1 | 0.0007 |
| QIR/R | 1 | 1.7287 |
| QNDVI | 1 | 3.1330 |

Unusual Observations

| Obs. | ATM1 | QpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 19 | 6.9 | 3.510 | 5.006 | 0.455 | -1.496 | -2.01R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{QNH4} = & 29.1 - 0.382 \text{ ATM1} - 0.177 \text{ ATM2} - 0.486 \text{ ATM3} + 0.60 \text{ ATM4} - 1.18 \text{ ATM5} \\ & + 0.412 \text{ ATM6} + 0.196 \text{ ATM7} - 0.087 \text{ ATM8} + 2.52 \text{ ATM9} - 16.7 \text{ ATM10} \\ & - 0.0291 \text{ ATM11} - 8.16 \text{ QIR/R} - 2.4 \text{ QNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 29.07 | 14.04 | 2.07 |
| ATM1 | -0.3820 | 0.3768 | -1.01 |
| ATM2 | -0.1766 | 0.7061 | -0.25 |
| ATM3 | -0.4856 | 0.7404 | -0.66 |
| ATM4 | 0.598 | 1.588 | 0.38 |
| ATM5 | -1.181 | 1.090 | -1.08 |
| ATM6 | 0.4124 | 0.5453 | 0.76 |
| ATM7 | 0.1962 | 0.6731 | 0.29 |
| ATM8 | -0.0874 | 0.5533 | -0.16 |
| ATM9 | 2.516 | 1.446 | 1.74 |
| ATM10 | -16.664 | 8.237 | -2.02 |
| ATM11 | -0.02914 | 0.03734 | -0.78 |
| QIR/R | -8.158 | 7.193 | -1.13 |
| QNDVI | -2.41 | 28.96 | -0.08 |

s = 1.086 R-sq = 53.5% R-sq(adj) = 27.2%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 13 | 31.188 | 2.399 |
| Error | 23 | 27.117 | 1.179 |
| Total | 36 | 58.305 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| ATM1 | 1 | 13.256 |
| ATM2 | 1 | 1.692 |
| ATM3 | 1 | 0.192 |
| ATM4 | 1 | 1.549 |
| ATM5 | 1 | 0.101 |
| ATM6 | 1 | 2.309 |
| ATM7 | 1 | 1.277 |
| ATM8 | 1 | 2.933 |
| ATM9 | 1 | 0.129 |
| ATM10 | 1 | 1.892 |
| ATM11 | 1 | 0.153 |
| QIR/R | 1 | 5.697 |
| QNDVI | 1 | 0.008 |

Unusual Observations

| Obs. | ATM1 | QNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 6 | 4.4 | 5.640 | 4.160 | 0.886 | 1.480 | 2.36R |
| 8 | 5.7 | 0.660 | 2.543 | 0.716 | -1.883 | -2.31R |
| 23 | 8.2 | 3.760 | 1.444 | 0.446 | 2.316 | 2.34R |
| 33 | 6.3 | 0.270 | 2.182 | 0.734 | -1.912 | -2.39R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{QN03} = & -0.72 + 0.163 \text{ ATM1} + 0.071 \text{ ATM2} - 0.479 \text{ ATM3} - 0.15 \text{ ATM4} + 0.324 \text{ ATM5} \\ & + 0.209 \text{ ATM6} - 0.279 \text{ ATM7} + 0.253 \text{ ATM8} + 1.49 \text{ ATM9} - 10.8 \text{ ATM10} \\ & + 0.0252 \text{ ATM11} - 0.05 \text{ QIR/R} - 5.3 \text{ QNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|---------|---------|
| Constant | -0.720 | 8.967 | -0.08 |
| ATM1 | 0.1629 | 0.2407 | 0.68 |
| ATM2 | 0.0711 | 0.4511 | 0.16 |
| ATM3 | -0.4794 | 0.4730 | -1.01 |
| ATM4 | -0.147 | 1.014 | -0.14 |
| ATM5 | 0.3241 | 0.6965 | 0.47 |
| ATM6 | 0.2087 | 0.3483 | 0.60 |
| ATM7 | -0.2795 | 0.4300 | -0.65 |
| ATM8 | 0.2525 | 0.3534 | 0.71 |
| ATM9 | 1.4933 | 0.9236 | 1.62 |
| ATM10 | -10.804 | 5.261 | -2.05 |
| ATM11 | 0.02520 | 0.02385 | 1.06 |
| QIR/R | -0.046 | 4.595 | -0.01 |
| QNDVI | -5.35 | 18.50 | -0.29 |

s = 0.6936 R-sq = 33.6% R-sq(adj) = 0.0%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 5.6002 | 0.4308 |
| Error | 23 | 11.0651 | 0.4811 |
| Total | 36 | 16.6653 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| ATM1 | 1 | 0.0001 |
| ATM2 | 1 | 0.4524 |
| ATM3 | 1 | 0.1255 |
| ATM4 | 1 | 0.1805 |
| ATM5 | 1 | 0.1775 |
| ATM6 | 1 | 0.3568 |
| ATM7 | 1 | 0.0016 |
| ATM8 | 1 | 1.7105 |
| ATM9 | 1 | 0.0103 |
| ATM10 | 1 | 1.8079 |
| ATM11 | 1 | 0.6350 |
| QIR/R | 1 | 0.1018 |
| QNDVI | 1 | 0.0402 |

Unusual Observations

| Obs. | ATM1 | QN03 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 1 | 6.9 | 3.080 | 1.792 | 0.426 | 1.288 | 2.35R |
| 3 | 5.6 | 0.150 | 0.858 | 0.606 | -0.708 | -2.10R |
| 30 | 7.9 | 1.690 | 0.388 | 0.366 | 1.302 | 2.21R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{QP04} = & 4.6 + 0.256 \text{ ATM1} + 0.446 \text{ ATM2} + 0.331 \text{ ATM3} - 1.38 \text{ ATM4} + 0.635 \text{ ATM5} \\ & - 0.252 \text{ ATM6} + 0.142 \text{ ATM7} + 0.156 \text{ ATM8} - 0.69 \text{ ATM9} + 3.17 \text{ ATM10} \\ & - 0.0288 \text{ ATM11} - 3.07 \text{ QIR/R} + 11.9 \text{ QNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 4.62 | 10.96 | 0.42 |
| ATM1 | 0.2560 | 0.2940 | 0.87 |
| ATM2 | 0.4463 | 0.5511 | 0.81 |
| ATM3 | 0.3306 | 0.5778 | 0.57 |
| ATM4 | -1.376 | 1.239 | -1.11 |
| ATM5 | 0.6354 | 0.8510 | 0.75 |
| ATM6 | -0.2521 | 0.4256 | -0.59 |
| ATM7 | 0.1418 | 0.5253 | 0.27 |
| ATM8 | 0.1559 | 0.4318 | 0.36 |
| ATM9 | -0.693 | 1.128 | -0.61 |
| ATM10 | 3.170 | 6.428 | 0.49 |
| ATM11 | -0.02882 | 0.02914 | -0.99 |
| QIR/R | -3.074 | 5.614 | -0.55 |
| QNDVI | 11.93 | 22.60 | 0.53 |

s = 0.8474 R-sq = 49.0% R-sq(adj) = 20.2%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 15.8823 | 1.2217 |
| Error | 23 | 16.5153 | 0.7181 |
| Total | 36 | 32.3976 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| ATM1 | 1 | 8.2106 |
| ATM2 | 1 | 1.9681 |
| ATM3 | 1 | 0.1216 |
| ATM4 | 1 | 0.2207 |
| ATM5 | 1 | 0.4359 |
| ATM6 | 1 | 0.4118 |
| ATM7 | 1 | 3.0482 |
| ATM8 | 1 | 0.3927 |
| ATM9 | 1 | 0.2077 |
| ATM10 | 1 | 0.1197 |
| ATM11 | 1 | 0.5184 |
| QIR/R | 1 | 0.0268 |
| QNDVI | 1 | 0.2002 |

Unusual Observations

| Obs. | ATM1 | QP04 | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 12 | 10.1 | 4.380 | 3.070 | 0.604 | 1.310 | 2.20R |
| 19 | 6.9 | 2.350 | 0.849 | 0.442 | 1.501 | 2.08R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{QK} = & 1090 + 8.6 \text{ ATM1} - 13.8 \text{ ATM2} + 18.1 \text{ ATM3} - 146 \text{ ATM4} + 59.8 \text{ ATM5} - 7.6 \text{ ATM6} \\ & + 20.3 \text{ ATM7} + 12.3 \text{ ATM8} + 27.3 \text{ ATM9} - 246 \text{ ATM10} - 0.56 \text{ ATM11} \\ & - 660 \text{ QIR/R} + 1655 \text{ QNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | 1089.6 | 489.8 | 2.22 |
| ATM1 | 8.62 | 13.15 | 0.66 |
| ATM2 | -13.84 | 24.64 | -0.56 |
| ATM3 | 18.12 | 25.84 | 0.70 |
| ATM4 | -145.87 | 55.41 | -2.63 |
| ATM5 | 59.76 | 38.05 | 1.57 |
| ATM6 | -7.57 | 19.03 | -0.40 |
| ATM7 | 20.35 | 23.49 | 0.87 |
| ATM8 | 12.25 | 19.31 | 0.63 |
| ATM9 | 27.32 | 50.45 | 0.54 |
| ATM10 | -245.7 | 287.4 | -0.85 |
| ATM11 | -0.558 | 1.303 | -0.43 |
| QIR/R | -659.6 | 251.0 | -2.63 |
| QNDVI | 1655 | 1010 | 1.64 |

s = 37.89 R-sq = 59.7% R-sq(adj) = 36.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|-------|------|
| Regression | 13 | 48888 | 3761 |
| Error | 23 | 33016 | 1435 |
| Total | 36 | 81904 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| ATM1 | 1 | 16433 |
| ATM2 | 1 | 8365 |
| ATM3 | 1 | 136 |
| ATM4 | 1 | 2 |
| ATM5 | 1 | 1126 |
| ATM6 | 1 | 37 |
| ATM7 | 1 | 9391 |
| ATM8 | 1 | 670 |
| ATM9 | 1 | 703 |
| ATM10 | 1 | 100 |
| ATM11 | 1 | 504 |
| QIR/R | 1 | 7570 |
| QNDVI | 1 | 3851 |

Unusual Observations

| Obs. | ATM1 | QK | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|--------|--------|-----------|----------|----------|
| 12 | 10.1 | 259.00 | 163.98 | 27.00 | 95.02 | 3.58R |
| 17 | 6.4 | 80.00 | 16.30 | 21.08 | 63.70 | 2.02R |
| 28 | 9.9 | 16.20 | 76.56 | 28.44 | -60.36 | -2.41R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{QCa} = & 2864 + 91.9 \text{ ATM1} - 116 \text{ ATM2} + 50.0 \text{ ATM3} - 402 \text{ ATM4} + 259 \text{ ATM5} - 65.4 \text{ ATM6} \\ & + 94.3 \text{ ATM7} - 2.2 \text{ ATM8} + 106 \text{ ATM9} - 1047 \text{ ATM10} - 0.94 \text{ ATM11} \\ & - 1176 \text{ QIR/R} + 1775 \text{ QNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | 2864 | 1726 | 1.66 |
| ATM1 | 91.90 | 46.32 | 1.98 |
| ATM2 | -116.32 | 86.82 | -1.34 |
| ATM3 | 49.96 | 91.03 | 0.55 |
| ATM4 | -401.7 | 195.2 | -2.06 |
| ATM5 | 258.6 | 134.1 | 1.93 |
| ATM6 | -65.36 | 67.04 | -0.97 |
| ATM7 | 94.26 | 82.76 | 1.14 |
| ATM8 | -2.21 | 68.03 | -0.03 |
| ATM9 | 106.3 | 177.8 | 0.60 |
| ATM10 | -1047 | 1013 | -1.03 |
| ATM11 | -0.943 | 4.591 | -0.21 |
| QIR/R | -1176.2 | 884.4 | -1.33 |
| QNDVI | 1775 | 3560 | 0.50 |

s = 133.5 R-sq = 65.1% R-sq(adj) = 45.4%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|-------|
| Regression | 13 | 765354 | 58873 |
| Error | 23 | 409904 | 17822 |
| Total | 36 | 1175258 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| ATM1 | 1 | 464562 |
| ATM2 | 1 | 7880 |
| ATM3 | 1 | 3126 |
| ATM4 | 1 | 215 |
| ATM5 | 1 | 88799 |
| ATM6 | 1 | 5 |
| ATM7 | 1 | 88764 |
| ATM8 | 1 | 40770 |
| ATM9 | 1 | 11416 |
| ATM10 | 1 | 4022 |
| ATM11 | 1 | 1853 |
| QIR/R | 1 | 49511 |
| QNDVI | 1 | 4432 |

Unusual Observations

| Obs. | ATM1 | QCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|------|-------|-------|-----------|----------|----------|
| 16 | 7.2 | 521.0 | 292.6 | 76.6 | 228.4 | 2.09R |

R denotes an obs. with a large st. resid.

APPENDIX 6

CRYMLYN BOG STUDY

**RELATING AIRBORNE SCANNER DATA
TO FIELD-MEASURED VARIABLES**

**MULTIVARIATE LINEAR REGRESSION RESULTS
TRANSECT SAMPLES**

The regression equation is

$$\begin{aligned} \text{TpH} = & 1.84 - 0.087 \text{ tATM1} + 0.493 \text{ tATM2} - 0.044 \text{ tATM3} + 0.556 \text{ tATM4} \\ & - 0.189 \text{ tATM5} - 0.175 \text{ tATM6} + 0.115 \text{ tATM7} - 0.097 \text{ tATM8} \\ & + 0.135 \text{ tATM9} - 3.78 \text{ tATM10} - 0.0190 \text{ tATM11} + 0.40 \text{ TIR/R} \\ & + 8.90 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|---------|---------|
| Constant | 1.843 | 4.763 | 0.39 |
| tATM1 | -0.0871 | 0.1127 | -0.77 |
| tATM2 | 0.4935 | 0.2232 | 2.21 |
| tATM3 | -0.0437 | 0.2358 | -0.19 |
| tATM4 | 0.5557 | 0.5018 | 1.11 |
| tATM5 | -0.1894 | 0.3390 | -0.56 |
| tATM6 | -0.1750 | 0.1563 | -1.12 |
| tATM7 | 0.1146 | 0.1932 | 0.59 |
| tATM8 | -0.0973 | 0.1481 | -0.66 |
| tATM9 | 0.1349 | 0.3882 | 0.35 |
| tATM10 | -3.784 | 2.635 | -1.44 |
| tATM11 | -0.01901 | 0.01062 | -1.79 |
| TIR/R | 0.402 | 1.405 | 0.29 |
| TNDVI | 8.904 | 6.705 | 1.33 |

s = 0.2452 R-sq = 79.0% R-sq(adj) = 51.7%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 13 | 2.26314 | 0.17409 |
| Error | 10 | 0.60115 | 0.06012 |
| Total | 23 | 2.86430 | |

| SOURCE | DF | SEQ SS |
|--------|----|---------|
| tATM1 | 1 | 0.03796 |
| tATM2 | 1 | 0.41836 |
| tATM3 | 1 | 0.00718 |
| tATM4 | 1 | 0.01882 |
| tATM5 | 1 | 0.03128 |
| tATM6 | 1 | 0.00145 |
| tATM7 | 1 | 0.04942 |
| tATM8 | 1 | 0.96495 |
| tATM9 | 1 | 0.26907 |
| tATM10 | 1 | 0.17812 |
| tATM11 | 1 | 0.16439 |
| TIR/R | 1 | 0.01611 |
| TNDVI | 1 | 0.10602 |

Unusual Observations

| Obs. | tATM1 | TpH | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 22 | 6.9 | 6.3400 | 6.6840 | 0.1816 | -0.3440 | -2.09R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TNH4} = & - 2.74 - 0.0569 \text{ tATM1} + 0.073 \text{ tATM2} + 0.131 \text{ tATM3} + 0.069 \text{ tATM4} \\ & - 0.017 \text{ tATM5} - 0.220 \text{ tATM6} + 0.217 \text{ tATM7} - 0.167 \text{ tATM8} \\ & + 0.244 \text{ tATM9} - 0.57 \text{ tATM10} + 0.0107 \text{ tATM11} + 1.49 \text{ TIR/R} \\ & - 4.82 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -2.740 | 3.885 | -0.71 |
| tATM1 | -0.05685 | 0.09192 | -0.62 |
| tATM2 | 0.0731 | 0.1821 | 0.40 |
| tATM3 | 0.1309 | 0.1923 | 0.68 |
| tATM4 | 0.0689 | 0.4093 | 0.17 |
| tATM5 | -0.0166 | 0.2765 | -0.06 |
| tATM6 | -0.2201 | 0.1275 | -1.73 |
| tATM7 | 0.2173 | 0.1576 | 1.38 |
| tATM8 | -0.1672 | 0.1208 | -1.38 |
| tATM9 | 0.2438 | 0.3167 | 0.77 |
| tATM10 | -0.575 | 2.149 | -0.27 |
| tATM11 | 0.010681 | 0.008663 | 1.23 |
| TIR/R | 1.488 | 1.146 | 1.30 |
| TNDVI | -4.815 | 5.469 | -0.88 |

s = 0.2000 R-sq = 72.1% R-sq(adj) = 35.8%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 13 | 1.03378 | 0.07952 |
| Error | 10 | 0.40001 | 0.04000 |
| Total | 23 | 1.43380 | |

| SOURCE | DF | SEQ SS |
|--------|----|---------|
| tATM1 | 1 | 0.12178 |
| tATM2 | 1 | 0.13731 |
| tATM3 | 1 | 0.01159 |
| tATM4 | 1 | 0.06605 |
| tATM5 | 1 | 0.01307 |
| tATM6 | 1 | 0.32606 |
| tATM7 | 1 | 0.15722 |
| tATM8 | 1 | 0.00161 |
| tATM9 | 1 | 0.05179 |
| tATM10 | 1 | 0.00089 |
| tATM11 | 1 | 0.06101 |
| TIR/R | 1 | 0.05439 |
| TNDVI | 1 | 0.03100 |

Unusual Observations

| Obs. | tATM1 | TNH4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 22 | 6.9 | 0.0400 | 0.3429 | 0.1481 | -0.3029 | -2.25R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TN03} = & - 1.93 - 0.0258 \text{ tATM1} + 0.197 \text{ tATM2} - 0.247 \text{ tATM3} + 0.428 \text{ tATM4} \\ & - 0.312 \text{ tATM5} + 0.0409 \text{ tATM6} + 0.011 \text{ tATM7} - 0.0312 \text{ tATM8} \\ & - 0.123 \text{ tATM9} + 0.74 \text{ tATM10} + 0.0144 \text{ tATM11} + 0.199 \text{ TIR/R} \\ & - 0.37 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|----------|----------|---------|
| Constant | -1.928 | 2.776 | -0.69 |
| tATM1 | -0.02583 | 0.06567 | -0.39 |
| tATM2 | 0.1971 | 0.1301 | 1.52 |
| tATM3 | -0.2475 | 0.1374 | -1.80 |
| tATM4 | 0.4276 | 0.2924 | 1.46 |
| tATM5 | -0.3124 | 0.1976 | -1.58 |
| tATM6 | 0.04088 | 0.09107 | 0.45 |
| tATM7 | 0.0110 | 0.1126 | 0.10 |
| tATM8 | -0.03116 | 0.08629 | -0.36 |
| tATM9 | -0.1235 | 0.2263 | -0.55 |
| tATM10 | 0.744 | 1.536 | 0.48 |
| tATM11 | 0.014448 | 0.006189 | 2.33 |
| TIR/R | 0.1994 | 0.8190 | 0.24 |
| TNDVI | -0.366 | 3.907 | -0.09 |

s = 0.1429 R-sq = 69.1% R-sq(adj) = 28.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 13 | 0.45623 | 0.03509 |
| Error | 10 | 0.20416 | 0.02042 |
| Total | 23 | 0.66040 | |

| SOURCE | DF | SEQ SS |
|--------|----|---------|
| tATM1 | 1 | 0.04735 |
| tATM2 | 1 | 0.00593 |
| tATM3 | 1 | 0.00254 |
| tATM4 | 1 | 0.01609 |
| tATM5 | 1 | 0.11196 |
| tATM6 | 1 | 0.06411 |
| tATM7 | 1 | 0.05556 |
| tATM8 | 1 | 0.01593 |
| tATM9 | 1 | 0.01455 |
| tATM10 | 1 | 0.00785 |
| tATM11 | 1 | 0.11307 |
| TIR/R | 1 | 0.00109 |
| TNDVI | 1 | 0.00018 |

Unusual Observations

| Obs. | tATM1 | TN03 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 20 | 7.2 | 0.8300 | 0.5690 | 0.1037 | 0.2610 | 2.66R |
| 22 | 6.9 | 0.2400 | 0.4623 | 0.1058 | -0.2223 | -2.31R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TK} = & 50.3 + 1.97 \text{ tATM1} + 3.74 \text{ tATM2} - 4.63 \text{ tATM3} + 8.23 \text{ tATM4} - 9.90 \text{ tATM5} \\ & + 0.84 \text{ tATM6} + 2.08 \text{ tATM7} - 1.33 \text{ tATM8} - 7.86 \text{ tATM9} + 26.8 \text{ tATM10} \\ & - 0.054 \text{ tATM11} - 24.5 \text{ TIR/R} + 50 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 50.34 | 89.27 | 0.56 |
| tATM1 | 1.968 | 2.112 | 0.93 |
| tATM2 | 3.737 | 4.183 | 0.89 |
| tATM3 | -4.632 | 4.419 | -1.05 |
| tATM4 | 8.231 | 9.404 | 0.88 |
| tATM5 | -9.898 | 6.354 | -1.56 |
| tATM6 | 0.843 | 2.929 | 0.29 |
| tATM7 | 2.079 | 3.621 | 0.57 |
| tATM8 | -1.333 | 2.775 | -0.48 |
| tATM9 | -7.859 | 7.276 | -1.08 |
| tATM10 | 26.80 | 49.38 | 0.54 |
| tATM11 | -0.0541 | 0.1990 | -0.27 |
| TIR/R | -24.54 | 26.34 | -0.93 |
| TNDVI | 49.9 | 125.7 | 0.40 |

s = 4.595 R-sq = 57.7% R-sq(adj) = 2.7%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 13 | 287.74 | 22.13 |
| Error | 10 | 211.15 | 21.12 |
| Total | 23 | 498.90 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 0.20 |
| tATM2 | 1 | 48.34 |
| tATM3 | 1 | 1.45 |
| tATM4 | 1 | 4.16 |
| tATM5 | 1 | 0.41 |
| tATM6 | 1 | 0.32 |
| tATM7 | 1 | 35.71 |
| tATM8 | 1 | 150.95 |
| tATM9 | 1 | 22.73 |
| tATM10 | 1 | 2.09 |
| tATM11 | 1 | 1.81 |
| TIR/R | 1 | 16.25 |
| TNDVI | 1 | 3.33 |

Unusual Observations

| Obs. | tATM1 | TK | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|-------|-----------|----------|----------|
| 9 | 9.6 | 20.000 | 9.760 | 2.830 | 10.240 | 2.83R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TCa} = & 129 + 4.79 \text{ tATM1} + 13.7 \text{ tATM2} - 6.1 \text{ tATM3} + 18.6 \text{ tATM4} - 20.1 \text{ tATM5} \\ & - 1.56 \text{ tATM6} + 5.38 \text{ tATM7} - 2.32 \text{ tATM8} - 0.7 \text{ tATM9} - 114 \text{ tATM10} \\ & - 0.727 \text{ tATM11} - 62.0 \text{ TIR/R} + 225 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 128.6 | 216.1 | 0.60 |
| tATM1 | 4.791 | 5.114 | 0.94 |
| tATM2 | 13.70 | 10.13 | 1.35 |
| tATM3 | -6.10 | 10.70 | -0.57 |
| tATM4 | 18.56 | 22.77 | 0.81 |
| tATM5 | -20.14 | 15.38 | -1.31 |
| tATM6 | -1.563 | 7.092 | -0.22 |
| tATM7 | 5.380 | 8.768 | 0.61 |
| tATM8 | -2.323 | 6.720 | -0.35 |
| tATM9 | -0.71 | 17.62 | -0.04 |
| tATM10 | -113.8 | 119.6 | -0.95 |
| tATM11 | -0.7268 | 0.4820 | -1.51 |
| TIR/R | -62.04 | 63.78 | -0.97 |
| TNDVI | 225.5 | 304.3 | 0.74 |

s = 11.13 R-sq = 68.4% R-sq(adj) = 27.2%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 13 | 2673.8 | 205.7 |
| Error | 10 | 1238.0 | 123.8 |
| Total | 23 | 3911.7 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 117.0 |
| tATM2 | 1 | 57.9 |
| tATM3 | 1 | 1.8 |
| tATM4 | 1 | 63.8 |
| tATM5 | 1 | 0.3 |
| tATM6 | 1 | 12.1 |
| tATM7 | 1 | 41.2 |
| tATM8 | 1 | 1371.9 |
| tATM9 | 1 | 346.5 |
| tATM10 | 1 | 221.3 |
| tATM11 | 1 | 280.4 |
| TIR/R | 1 | 91.6 |
| TNDVI | 1 | 68.0 |

Unusual Observations

| Obs. | tATM1 | TCa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 24 | 10.5 | 19.30 | 30.15 | 9.99 | -10.85 | -2.22R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TCOND} = & 1333 + 51.6 \text{ tATM1} + 116 \text{ tATM2} - 52 \text{ tATM3} + 170 \text{ tATM4} - 204 \text{ tATM5} \\ & + 8.2 \text{ tATM6} + 11 \text{ tATM7} + 17.5 \text{ tATM8} - 123 \text{ tATM9} + 59 \text{ tATM10} \\ & - 12.6 \text{ tATM11} - 707 \text{ TIR/R} + 3622 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|-------|---------|
| Constant | 1333 | 2527 | 0.53 |
| tATM1 | 51.58 | 59.78 | 0.86 |
| tATM2 | 116.1 | 118.4 | 0.98 |
| tATM3 | -51.8 | 125.1 | -0.41 |
| tATM4 | 169.6 | 266.2 | 0.64 |
| tATM5 | -204.4 | 179.9 | -1.14 |
| tATM6 | 8.15 | 82.91 | 0.10 |
| tATM7 | 10.7 | 102.5 | 0.10 |
| tATM8 | 17.46 | 78.56 | 0.22 |
| tATM9 | -122.5 | 206.0 | -0.59 |
| tATM10 | 59 | 1398 | 0.04 |
| tATM11 | -12.619 | 5.635 | -2.24 |
| TIR/R | -706.8 | 745.6 | -0.95 |
| TNDVI | 3622 | 3557 | 1.02 |

s = 130.1 R-sq = 76.1% R-sq(adj) = 45.0%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 13 | 538955 | 41458 |
| Error | 10 | 169202 | 16920 |
| Total | 23 | 708157 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 94852 |
| tATM2 | 1 | 49357 |
| tATM3 | 1 | 12277 |
| tATM4 | 1 | 31708 |
| tATM5 | 1 | 411 |
| tATM6 | 1 | 45257 |
| tATM7 | 1 | 13790 |
| tATM8 | 1 | 123728 |
| tATM9 | 1 | 54437 |
| tATM10 | 1 | 2287 |
| tATM11 | 1 | 82816 |
| TIR/R | 1 | 10488 |
| TNDVI | 1 | 17548 |

The regression equation is

$$\begin{aligned} \text{TCl} = & -71 + 6.95 \text{ tATM1} + 4.25 \text{ tATM2} + 0.95 \text{ tATM3} + 12.6 \text{ tATM4} - 6.4 \text{ tATM5} \\ & - 0.98 \text{ tATM6} - 3.71 \text{ tATM7} + 1.98 \text{ tATM8} + 19.5 \text{ tATM9} - 93.8 \text{ tATM10} \\ & - 0.836 \text{ tATM11} + 56.4 \text{ TIR/R} - 117 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | -71.0 | 152.9 | -0.46 |
| tATM1 | 6.952 | 3.617 | 1.92 |
| tATM2 | 4.251 | 7.165 | 0.59 |
| tATM3 | 0.947 | 7.569 | 0.13 |
| tATM4 | 12.59 | 16.11 | 0.78 |
| tATM5 | -6.43 | 10.88 | -0.59 |
| tATM6 | -0.981 | 5.016 | -0.20 |
| tATM7 | -3.714 | 6.202 | -0.60 |
| tATM8 | 1.977 | 4.753 | 0.42 |
| tATM9 | 19.50 | 12.46 | 1.57 |
| tATM10 | -93.77 | 84.58 | -1.11 |
| tATM11 | -0.8361 | 0.3409 | -2.45 |
| TIR/R | 56.41 | 45.11 | 1.25 |
| TNDVI | -116.9 | 215.2 | -0.54 |

s = 7.870 R-sq = 68.0% R-sq(adj) = 26.3%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 1313.73 | 101.06 |
| Error | 10 | 619.42 | 61.94 |
| Total | 23 | 1933.15 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 6.38 |
| tATM2 | 1 | 107.31 |
| tATM3 | 1 | 0.24 |
| tATM4 | 1 | 10.31 |
| tATM5 | 1 | 173.36 |
| tATM6 | 1 | 156.48 |
| tATM7 | 1 | 318.60 |
| tATM8 | 1 | 3.58 |
| tATM9 | 1 | 16.31 |
| tATM10 | 1 | 48.16 |
| tATM11 | 1 | 369.13 |
| TIR/R | 1 | 85.62 |
| TNDVI | 1 | 18.26 |

Unusual Observations

| Obs. | tATM1 | TCl | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 19 | 8.3 | 52.50 | 40.76 | 5.84 | 11.74 | 2.22R |
| 24 | 10.5 | 15.10 | 22.36 | 7.07 | -7.26 | -2.10R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TF} = & - 2.15 + 0.0353 \text{ tATM1} - 0.067 \text{ tATM2} + 0.085 \text{ tATM3} - 0.217 \text{ tATM4} \\ & + 0.303 \text{ tATM5} + 0.033 \text{ tATM6} - 0.158 \text{ tATM7} + 0.129 \text{ tATM8} \\ & - 0.199 \text{ tATM9} - 0.17 \text{ tATM10} - 0.00244 \text{ tATM11} + 0.74 \text{ TIR/R} \\ & + 1.69 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | -2.146 | 3.704 | -0.58 |
| tATM1 | 0.03534 | 0.08763 | 0.40 |
| tATM2 | -0.0670 | 0.1736 | -0.39 |
| tATM3 | 0.0848 | 0.1834 | 0.46 |
| tATM4 | -0.2168 | 0.3902 | -0.56 |
| tATM5 | 0.3032 | 0.2636 | 1.15 |
| tATM6 | 0.0329 | 0.1215 | 0.27 |
| tATM7 | -0.1577 | 0.1503 | -1.05 |
| tATM8 | 0.1288 | 0.1151 | 1.12 |
| tATM9 | -0.1986 | 0.3019 | -0.66 |
| tATM10 | -0.174 | 2.049 | -0.08 |
| tATM11 | -0.002438 | 0.008259 | -0.30 |
| TIR/R | 0.739 | 1.093 | 0.68 |
| TNDVI | 1.689 | 5.214 | 0.32 |

s = 0.1907 R-sq = 56.7% R-sq(adj) = 0.5%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|---------|
| Regression | 13 | 0.47646 | 0.03665 |
| Error | 10 | 0.36352 | 0.03635 |
| Total | 23 | 0.83998 | |

| SOURCE | DF | SEQ SS |
|--------|----|---------|
| tATM1 | 1 | 0.00071 |
| tATM2 | 1 | 0.10914 |
| tATM3 | 1 | 0.01942 |
| tATM4 | 1 | 0.06887 |
| tATM5 | 1 | 0.03541 |
| tATM6 | 1 | 0.01445 |
| tATM7 | 1 | 0.09508 |
| tATM8 | 1 | 0.00112 |
| tATM9 | 1 | 0.10661 |
| tATM10 | 1 | 0.00003 |
| tATM11 | 1 | 0.00182 |
| TIR/R | 1 | 0.01998 |
| TNDVI | 1 | 0.00382 |

The regression equation is

$$\begin{aligned} \text{TBr} = & 1.53 + 0.0079 \text{ tATM1} + 0.0256 \text{ tATM2} + 0.0199 \text{ tATM3} - 0.109 \text{ tATM4} \\ & + 0.008 \text{ tATM5} + 0.0152 \text{ tATM6} - 0.0125 \text{ tATM7} + 0.0356 \text{ tATM8} \\ & + 0.030 \text{ tATM9} - 0.825 \text{ tATM10} - 0.00130 \text{ tATM11} - 0.425 \text{ TIR/R} \\ & - 0.04 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|-----------|----------|---------|
| Constant | 1.532 | 1.793 | 0.85 |
| tATM1 | 0.00788 | 0.04243 | 0.19 |
| tATM2 | 0.02561 | 0.08403 | 0.30 |
| tATM3 | 0.01987 | 0.08878 | 0.22 |
| tATM4 | -0.1090 | 0.1889 | -0.58 |
| tATM5 | 0.0081 | 0.1276 | 0.06 |
| tATM6 | 0.01524 | 0.05884 | 0.26 |
| tATM7 | -0.01253 | 0.07274 | -0.17 |
| tATM8 | 0.03557 | 0.05575 | 0.64 |
| tATM9 | 0.0304 | 0.1462 | 0.21 |
| tATM10 | -0.8245 | 0.9920 | -0.83 |
| tATM11 | -0.001301 | 0.003999 | -0.33 |
| TIR/R | -0.4247 | 0.5291 | -0.80 |
| TNDVI | -0.039 | 2.524 | -0.02 |

s = 0.09231 R-sq = 42.3% R-sq(adj) = 0.0%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|----------|----------|
| Regression | 13 | 0.062591 | 0.004815 |
| Error | 10 | 0.085209 | 0.008521 |
| Total | 23 | 0.147800 | |

| SOURCE | DF | SEQ SS |
|--------|----|----------|
| tATM1 | 1 | 0.013958 |
| tATM2 | 1 | 0.013406 |
| tATM3 | 1 | 0.000132 |
| tATM4 | 1 | 0.014493 |
| tATM5 | 1 | 0.001092 |
| tATM6 | 1 | 0.000897 |
| tATM7 | 1 | 0.000027 |
| tATM8 | 1 | 0.000057 |
| tATM9 | 1 | 0.002831 |
| tATM10 | 1 | 0.008789 |
| tATM11 | 1 | 0.001220 |
| TIR/R | 1 | 0.005686 |
| TNDVI | 1 | 0.000002 |

Unusual Observations

| Obs. | tATM1 | TBr | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|--------|--------|-----------|----------|----------|
| 9 | 9.6 | 0.0000 | 0.1650 | 0.0568 | -0.1650 | -2.27R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TSO4} = & 32 + 10.7 \text{ tATM1} + 8.2 \text{ tATM2} - 14.1 \text{ tATM3} + 35.9 \text{ tATM4} - 35.5 \text{ tATM5} \\ & + 2.4 \text{ tATM6} + 4.0 \text{ tATM7} - 4.3 \text{ tATM8} - 20.0 \text{ tATM9} + 85 \text{ tATM10} \\ & - 0.568 \text{ tATM11} - 56 \text{ TIR/R} + 380 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 32.4 | 350.4 | 0.09 |
| tATM1 | 10.659 | 8.291 | 1.29 |
| tATM2 | 8.18 | 16.42 | 0.50 |
| tATM3 | -14.08 | 17.35 | -0.81 |
| tATM4 | 38.91 | 36.92 | 1.05 |
| tATM5 | -35.53 | 24.94 | -1.42 |
| tATM6 | 2.37 | 11.50 | 0.21 |
| tATM7 | 3.95 | 14.22 | 0.28 |
| tATM8 | -4.32 | 10.90 | -0.40 |
| tATM9 | -20.05 | 28.57 | -0.70 |
| tATM10 | 84.5 | 193.9 | 0.44 |
| tATM11 | -0.5678 | 0.7814 | -0.73 |
| TIR/R | -55.8 | 103.4 | -0.54 |
| TNDVI | 380.1 | 493.3 | 0.77 |

s = 18.04 R-sq = 52.4% R-sq(adj) = 0.0%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|-------|
| Regression | 13 | 3577.7 | 275.2 |
| Error | 10 | 3254.5 | 325.4 |
| Total | 23 | 6832.2 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 209.1 |
| tATM2 | 1 | 949.8 |
| tATM3 | 1 | 14.1 |
| tATM4 | 1 | 19.7 |
| tATM5 | 1 | 21.6 |
| tATM6 | 1 | 5.6 |
| tATM7 | 1 | 251.5 |
| tATM8 | 1 | 1475.0 |
| tATM9 | 1 | 214.4 |
| tATM10 | 1 | 12.6 |
| tATM11 | 1 | 154.7 |
| TIR/R | 1 | 56.3 |
| TNDVI | 1 | 193.2 |

Unusual Observations

| Obs. | tATM1 | TSO4 | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 9.6 | 67.20 | 31.51 | 11.11 | 35.69 | 2.51R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TNa} = & 91 + 4.14 \cdot \text{tATM1} + 1.6 \text{ tATM2} + 6.5 \text{ tATM3} - 9.5 \text{ tATM4} + 4.2 \text{ tATM5} \\ & + 0.7 \text{ tATM6} - 7.0 \text{ tATM7} + 10.1 \text{ tATM8} - 15.8 \text{ tATM9} + 76 \text{ tATM10} \\ & - 1.65 \text{ tATM11} - 45.9 \text{ TIR/R} + 359 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 91.1 | 305.4 | 0.30 |
| tATM1 | 4.143 | 7.226 | 0.57 |
| tATM2 | 1.62 | 14.31 | 0.11 |
| tATM3 | 6.53 | 15.12 | 0.43 |
| tATM4 | -9.49 | 32.17 | -0.29 |
| tATM5 | 4.15 | 21.74 | 0.19 |
| tATM6 | 0.73 | 10.02 | 0.07 |
| tATM7 | -7.03 | 12.39 | -0.57 |
| tATM8 | 10.111 | 9.495 | 1.06 |
| tATM9 | -15.85 | 24.89 | -0.64 |
| tATM10 | 76.5 | 169.0 | 0.45 |
| tATM11 | -1.6461 | 0.6810 | -2.42 |
| TIR/R | -45.87 | 90.12 | -0.51 |
| TNDVI | 359.3 | 429.9 | 0.84 |

s = 15.72 R-sq = 80.0% R-sq(adj) = 53.9%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|-------|
| Regression | 13 | 9867.3 | 759.0 |
| Error | 10 | 2471.7 | 247.2 |
| Total | 23 | 12339.0 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 1898.3 |
| tATM2 | 1 | 533.6 |
| tATM3 | 1 | 525.2 |
| tATM4 | 1 | 429.3 |
| tATM5 | 1 | 3.0 |
| tATM6 | 1 | 1746.6 |
| tATM7 | 1 | 2227.9 |
| tATM8 | 1 | 221.4 |
| tATM9 | 1 | 666.3 |
| tATM10 | 1 | 7.0 |
| tATM11 | 1 | 1401.6 |
| TIR/R | 1 | 34.4 |
| TNDVI | 1 | 172.7 |

Unusual Observations

| Obs. | tATM1 | TNa | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 15 | 7.8 | 73.00 | 55.20 | 13.31 | 17.80 | 2.13R |

R denotes an obs. with a large st. resid.

The regression equation is

$$\begin{aligned} \text{TMg} = & 59 + 3.39 \text{ tATM1} + 8.02 \text{ tATM2} - 9.12 \text{ tATM3} + 19.3 \text{ tATM4} - 18.5 \text{ tATM5} \\ & + 1.95 \text{ tATM6} + 1.95 \text{ tATM7} - 1.69 \text{ tATM8} - 5.71 \text{ tATM9} - 8.1 \text{ tATM10} \\ & - 0.247 \text{ tATM11} - 26.3 \text{ TIR/R} + 63 \text{ TNDVI} \end{aligned}$$

| Predictor | Coef | Stdev | t-ratio |
|-----------|---------|--------|---------|
| Constant | 59.4 | 120.6 | 0.49 |
| tATM1 | 3.390 | 2.853 | 1.19 |
| tATM2 | 8.024 | 5.651 | 1.42 |
| tATM3 | -9.123 | 5.970 | -1.53 |
| tATM4 | 19.33 | 12.70 | 1.52 |
| tATM5 | -18.545 | 8.584 | -2.16 |
| tATM6 | 1.953 | 3.957 | 0.49 |
| tATM7 | 1.945 | 4.892 | 0.40 |
| tATM8 | -1.686 | 3.749 | -0.45 |
| tATM9 | -5.709 | 9.830 | -0.58 |
| tATM10 | -8.11 | 66.71 | -0.12 |
| tATM11 | -0.2474 | 0.2689 | -0.92 |
| TIR/R | -26.32 | 35.58 | -0.74 |
| TNDVI | 63.3 | 169.8 | 0.37 |

s = 6.208

R-sq = 65.9%

R-sq(adj) = 21.6%

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|-------|
| Regression | 13 | 744.52 | 57.27 |
| Error | 10 | 385.38 | 38.54 |
| Total | 23 | 1129.90 | |

| SOURCE | DF | SEQ SS |
|--------|----|--------|
| tATM1 | 1 | 14.17 |
| tATM2 | 1 | 100.86 |
| tATM3 | 1 | 1.53 |
| tATM4 | 1 | 4.05 |
| tATM5 | 1 | 0.36 |
| tATM6 | 1 | 0.21 |
| tATM7 | 1 | 114.59 |
| tATM8 | 1 | 368.93 |
| tATM9 | 1 | 77.85 |
| tATM10 | 1 | 4.75 |
| tATM11 | 1 | 33.69 |
| TIR/R | 1 | 18.16 |
| TNDVI | 1 | 5.36 |

Unusual Observations

| Obs. | tATM1 | TMg | Fit | Stdev.Fit | Residual | St.Resid |
|------|-------|-------|-------|-----------|----------|----------|
| 9 | 9.6 | 30.80 | 17.21 | 3.82 | 13.59 | 2.78R |

R denotes an obs. with a large st. resid.

APPENDIX 7

CRYMLYN BOG STUDY

RELATING AIRBORNE SCANNER DATA TO FIELD-MEASURED VARIABLES

MULTIVARIATE LINEAR REGRESSION RESULTS ALL FIELD SAMPLES COMBINED

The regression equation is

$$\begin{aligned} \text{pH} = & 4.29 - 0.038 \text{ cATM1} + 0.026 \text{ cATM2} + 0.942 \text{ cATM3} - 1.34 \text{ cATM4} + 0.968 \text{ cATM5} \\ & - 0.453 \text{ cATM6} + 0.243 \text{ cATM7} - 0.056 \text{ cATM8} - 0.188 \text{ cATM9} \\ & - 1.19 \text{ cATM10} - 0.0379 \text{ cATM11} - 1.59 \text{ IR/R} + 20.5 \text{ NDVI} \end{aligned}$$

$$s = 0.9606 \quad R\text{-sq} = 46.9\% \quad R\text{-sq(adj)} = 32.2\%$$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 38.3255 | 2.9481 |
| Error | 47 | 43.3720 | 0.9228 |
| Total | 60 | 81.6976 | |

The regression equation is

$$\begin{aligned} \text{NH}_4 = & 21.8 - 0.218 \text{ cATM1} - 0.329 \text{ cATM2} + 0.053 \text{ cATM3} - 0.831 \text{ cATM4} \\ & + 0.060 \text{ cATM5} - 0.002 \text{ cATM6} + 0.333 \text{ cATM7} - 0.014 \text{ cATM8} \\ & + 1.17 \text{ cATM9} - 8.86 \text{ cATM10} + 0.0107 \text{ cATM11} - 4.33 \text{ IR/R} - 18.5 \text{ NDVI} \end{aligned}$$

$$s = 0.9905 \quad R\text{-sq} = 43.7\% \quad R\text{-sq(adj)} = 28.1\%$$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 35.7790 | 2.7522 |
| Error | 47 | 46.1124 | 0.9811 |
| Total | 60 | 81.8914 | |

The regression equation is

$$\begin{aligned} \text{NO}_3 = & - 2.96 + 0.002 \text{ cATM1} + 0.028 \text{ cATM2} - 0.299 \text{ cATM3} + 0.131 \text{ cATM4} \\ & + 0.080 \text{ cATM5} + 0.189 \text{ cATM6} - 0.245 \text{ cATM7} + 0.161 \text{ cATM8} \\ & + 0.392 \text{ cATM9} - 3.60 \text{ cATM10} + 0.0251 \text{ cATM11} + 0.53 \text{ IR/R} - 1.21 \text{ NDVI} \end{aligned}$$

$$s = 0.5932 \quad R\text{-sq} = 26.5\% \quad R\text{-sq(adj)} = 6.1\%$$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|--------|
| Regression | 13 | 5.9541 | 0.4580 |
| Error | 47 | 16.5403 | 0.3519 |
| Total | 60 | 22.4944 | |

The regression equation is

$$K = 689 + 2.10 \text{ cATM1} - 14.6 \text{ cATM2} + 18.2 \text{ cATM3} - 89.9 \text{ cATM4} + 33.5 \text{ cATM5} \\ - 0.4 \text{ cATM6} + 9.1 \text{ cATM7} + 9.5 \text{ cATM8} - 17.7 \text{ cATM9} + 24 \text{ cATM10} \\ - 0.007 \text{ cATM11} - 395 \text{ IR/R} + 856 \text{ NDVI}$$

$$s = 37.35 \quad R\text{-sq} = 35.5\% \quad R\text{-sq(adj)} = 17.7\%$$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|--------|------|
| Regression | 13 | 36091 | 2776 |
| Error | 47 | 65557 | 1395 |
| Total | 60 | 101647 | |

The regression equation is

$$Ca = 3862 + 31.6 \text{ cATM1} - 196 \text{ cATM2} + 61 \text{ cATM3} - 367 \text{ cATM4} + 125 \text{ cATM5} \\ + 31.2 \text{ cATM6} + 34.3 \text{ cATM7} + 29.3 \text{ cATM8} - 53 \text{ cATM9} + 328 \text{ cATM10} \\ + 3.53 \text{ cATM11} - 1662 \text{ IR/R} + 2265 \text{ NDVI}$$

$$s = 230.1 \quad R\text{-sq} = 31.2\% \quad R\text{-sq(adj)} = 12.2\%$$

Analysis of Variance

| SOURCE | DF | SS | MS |
|------------|----|---------|-------|
| Regression | 13 | 1130596 | 86969 |
| Error | 47 | 2487769 | 52931 |
| Total | 60 | 3618364 | |

APPENDIX 8

GLYDERAU STUDY (CHAPTER 4)

**CORRESPONDENCE TABLES BETWEEN THE
N.C.C. 1984 FIELD SURVEY MAP
AND THE SIXTEEN CLASSMAPS PRODUCED FROM
THE LANDSAT THEMATIC MAPPER (TM) DATA**

TABLES 4.11 a TO p.

TABLES 4.11 a to p

The normalised correspondence tables (Congalton, 1991)
between the NCC 1984 Field survey map
and the sixteen Thematic Mapper classmaps

Classes refer to Level II, Table 4.1

| | | PRE-Classification MEDIAN filter | | | |
|-------------------------|-----|----------------------------------|-----|-----|-----|
| | | 0 | 3x3 | 5x5 | 7x7 |
| | 0 | a | e | i | m |
| POST | 3x3 | b | f | j | n |
| Classification | 5x5 | c | g | k | o |
| MAJORITY-MODE filter | 7x7 | d | h | l | p |

TABLE 4.11 a

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: NONE
POST-CLASSIFICATION FILTER: NONE

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.3 | 0.1 | 0.1 | 0.5 | 0.1 | 0.3 | 0.4 | 0.1 | 0.2 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | 0.1 | 32.1 | 3.6 | 1.6 | 18.3 | 2.5 | 12.4 | 8.9 | 2.6 | 10.5 | 4.9 | 2.5 |
| 3 | - | - | 13.8 | 24.9 | 4.6 | 6.0 | - | 14.1 | 16.9 | 4.3 | 9.6 | 5.7 | - |
| 4 | - | 2.5 | 8.2 | 3.3 | 45.7 | 11.2 | 2.5 | 6.2 | 0.2 | 8.4 | 1.1 | 5.7 | 4.9 |
| 5 | - | - | 10.9 | 0.7 | 3.4 | 58.4 | 0.8 | 8.3 | 4.8 | 7.8 | 1.2 | 1.5 | 2.3 |
| 6 | - | - | 2.0 | - | 2.4 | 3.1 | 75.6 | - | - | 0.4 | - | 0.6 | 15.9 |
| 7 | - | - | 13.3 | 8.2 | 0.5 | 8.3 | - | 38.5 | 16.7 | 3.3 | 8.5 | 2.0 | 0.8 |
| 8 | - | 0.3 | 4.9 | 3.8 | 0.3 | 3.9 | - | 10.0 | 68.1 | 0.8 | 6.4 | 1.4 | 0.2 |
| 9 | - | - | 10.7 | 2.6 | 4.0 | 17.0 | 1.4 | 19.2 | 3.3 | 33.7 | 0.9 | 3.4 | 3.7 |
| 10 | - | - | 9.0 | 6.1 | 0.8 | 2.5 | - | 4.0 | 9.7 | 0.7 | 63.9 | 3.3 | - |
| 11 | - | - | 11.7 | 7.2 | 6.2 | 5.1 | 0.4 | 8.9 | 5.4 | 5.3 | 4.8 | 42.7 | 2.2 |
| 12 | - | - | 10.1 | - | 9.8 | 8.9 | 10.1 | 5.4 | 0.3 | 6.5 | - | 7.1 | 41.8 |

TABLE 4.11 b

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: NONE
POST-CLASSIFICATION FILTER: MEDIAN 3*3

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.2 | 0.1 | 0.1 | 0.6 | 0.1 | 0.4 | 0.4 | 0.1 | 0.2 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 29.1 | 3.5 | 1.6 | 21.5 | 2.9 | 14.4 | 9.8 | 2.1 | 9.9 | 3.2 | 1.9 |
| 3 | - | - | 10.6 | 21.9 | 7.9 | 8.3 | - | 17.5 | 21.1 | 2.2 | 7.5 | 3.0 | - |
| 4 | - | 1.6 | 3.9 | 3.0 | 53.0 | 13.7 | 2.0 | 7.5 | 0.2 | 6.7 | 1.1 | 4.0 | 3.3 |
| 5 | - | - | 7.2 | 0.5 | 3.0 | 65.4 | 0.8 | 9.5 | 5.0 | 5.9 | 1.1 | 0.8 | 0.8 |
| 6 | - | - | 0.7 | - | 1.7 | 3.3 | 80.6 | 0.1 | - | 0.4 | 0.1 | 0.1 | 13.1 |
| 7 | - | - | 10.4 | 6.9 | 0.6 | 9.2 | - | 43.4 | 18.6 | 2.1 | 7.3 | 0.9 | 0.5 |
| 8 | - | 0.2 | 3.3 | 1.5 | 0.3 | 3.9 | - | 10.0 | 75.2 | 0.6 | 4.3 | 0.7 | - |
| 9 | - | - | 7.1 | 1.3 | 3.7 | 19.7 | 1.9 | 23.9 | 3.9 | 32.7 | 0.9 | 2.8 | 2.0 |
| 10 | - | - | 5.8 | 5.1 | 1.0 | 3.0 | - | 4.5 | 11.8 | 0.4 | 66.8 | 1.6 | - |
| 11 | - | - | 6.8 | 6.2 | 8.4 | 6.1 | 0.4 | 13.2 | 6.8 | 4.0 | 3.7 | 42.9 | 1.3 |
| 12 | - | - | 6.3 | - | 10.9 | 10.1 | 8.4 | 7.1 | 0.6 | 7.6 | 0.2 | 7.1 | 41.6 |

TABLE 4.11 c

Normalised correspondence table
 between the NCC 1984 Field survey map
 and one of the Thematic Mapper classmaps.
 Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
 CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: NONE
 POST-CLASSIFICATION FILTER: MEDIAN 5*5

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.2 | 0.1 | 0.1 | 0.6 | 0.1 | 0.4 | 0.5 | 0.1 | 0.2 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 26.4 | 3.7 | 1.8 | 24.4 | 3.4 | 15.8 | 10.6 | 1.4 | 8.9 | 2.2 | 1.4 |
| 3 | - | - | 9.1 | 20.0 | 9.9 | 11.0 | - | 19.3 | 22.5 | 0.7 | 7.5 | - | - |
| 4 | - | - | 1.6 | 1.8 | 59.3 | 17.4 | 1.2 | 8.6 | - | 6.7 | 1.1 | 1.6 | 0.7 |
| 5 | - | - | 3.7 | 0.3 | 2.6 | 70.4 | 0.5 | 11.2 | 5.6 | 4.2 | 0.7 | 0.5 | 0.1 |
| 6 | - | - | - | - | 1.1 | 3.1 | 84.4 | 0.1 | - | 0.6 | - | - | 10.8 |
| 7 | - | - | 8.4 | 6.4 | 0.5 | 9.5 | - | 47.2 | 21.0 | 2.0 | 4.5 | 0.4 | 0.2 |
| 8 | - | 0.1 | 2.0 | 0.4 | 0.3 | 4.4 | - | 8.3 | 81.5 | 0.6 | 2.2 | 0.2 | - |
| 9 | - | - | 4.4 | 0.5 | 3.1 | 21.3 | 2.4 | 28.2 | 4.3 | 31.8 | 0.8 | 2.2 | 1.1 |
| 10 | - | - | 4.1 | 2.8 | 0.9 | 3.9 | - | 5.6 | 13.3 | 0.4 | 68.6 | 0.4 | - |
| 11 | - | - | 4.2 | 4.0 | 10.7 | 5.1 | 0.4 | 16.2 | 9.1 | 4.7 | 3.3 | 41.3 | 0.9 |
| 12 | - | - | 2.4 | 0.3 | 11.7 | 11.4 | 6.3 | 11.2 | 0.5 | 6.8 | - | 4.4 | 44.9 |

TABLE 4.11 d

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: NONE
POST-CLASSIFICATION FILTER: MEDIAN 7*7

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | 0 | 0.2 | 0.1 | 0.1 | 0.6 | 0.1 | 0.5 | 0.5 | 0.1 | 0.2 | 0.1 | - |
| 1 | - | 100 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | 24.6 | 3.5 | 1.8 | 26.6 | 3.7 | 16.8 | 11.1 | 1.1 | 1.1 | 8.5 | 1.4 | 1.0 |
| 3 | - | 7.3 | 17.7 | 9.6 | 17.5 | - | 19.1 | 22.8 | 0.4 | 0.4 | 5.6 | - | - |
| 4 | - | 1.9 | 0.8 | 62.2 | 17.9 | 1.1 | 10.4 | - | 4.7 | 4.7 | - | 0.9 | - |
| 5 | - | 2.4 | - | 1.8 | 73.6 | 0.4 | 11.9 | 5.5 | 3.5 | 3.5 | 0.7 | 0.2 | - |
| 6 | - | - | - | 0.2 | 2.1 | 88.7 | - | - | 0.9 | 0.9 | - | - | 8.0 |
| 7 | - | 6.4 | 6.2 | 0.6 | 9.6 | - | 50.8 | 21.8 | 1.4 | 1.4 | 3.3 | - | - |
| 8 | - | 1.2 | 0.2 | 0.2 | 4.6 | - | 7.3 | 85.0 | 0.6 | 0.6 | 0.9 | - | - |
| 9 | - | 3.2 | 0.3 | 2.4 | 21.2 | 2.6 | 30.9 | 5.2 | 31.3 | 31.3 | 0.8 | 1.7 | 0.6 |
| 10 | - | 3.3 | 1.8 | 0.2 | 3.7 | - | 5.5 | 14.4 | 0.7 | 0.7 | 70.3 | - | - |
| 11 | - | 1.5 | 5.6 | 9.9 | 6.1 | 0.8 | 19.9 | 10.4 | 4.9 | 4.9 | 3.2 | 37.6 | - |
| 12 | - | - | 0.2 | 9.8 | 12.2 | 6.6 | 16.1 | 0.3 | 6.8 | 6.8 | - | 2.8 | 45.1 |

TABLE 4.11 e

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: 3*3
POST-CLASSIFICATION FILTER: NONE

Cell values normalised by row.

| | | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | | |
|--------------|----|--|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| NCC CLASS | 0 | 97.6 | - | 0.3 | 0.2 | 0.1 | 0.4 | 0.1 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | |
| | 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | |
| | 2 | - | 0.2 | 27.6 | 6.5 | 2.4 | 18.3 | 2.6 | 10.1 | 9.1 | 5.1 | 5.1 | 9.8 | 4.6 | 3.7 |
| | 3 | - | 1.5 | 13.3 | 36.3 | 2.5 | 7.8 | - | 13.6 | 12.2 | 1.7 | 1.7 | 7.0 | 4.1 | - |
| | 4 | - | 1.5 | 7.0 | 3.3 | 48.9 | 15.9 | 1.6 | 6.5 | 0.3 | 7.0 | 7.0 | 0.8 | 4.7 | 2.5 |
| | 5 | - | - | 11.0 | 1.5 | 6.0 | 55.0 | 0.5 | 7.0 | 3.0 | 9.9 | 9.9 | 2.7 | 1.1 | 2.3 |
| | 6 | - | - | 0.8 | - | 3.7 | 1.2 | 72.2 | - | - | 0.2 | 0.2 | - | 0.9 | 20.8 |
| | 7 | - | 0.2 | 12.4 | 10.6 | 0.7 | 7.3 | - | 41.9 | 14.3 | 3.8 | 3.8 | 5.7 | 2.5 | 0.7 |
| | 8 | - | 0.3 | 5.6 | 11.2 | 0.1 | 2.4 | - | 6.0 | 67.0 | 0.9 | 0.9 | 4.9 | 1.6 | 0.1 |
| | 9 | - | 0.4 | 10.3 | 7.5 | 6.8 | 16.0 | 1.5 | 14.2 | 3.9 | 29.5 | 29.5 | 1.9 | 3.8 | 4.3 |
| | 10 | - | 0.1 | 6.7 | 6.9 | 1.0 | 2.5 | - | 6.2 | 19.5 | 1.6 | 1.6 | 51.1 | 4.4 | 0.2 |
| | 11 | - | - | 6.3 | 9.6 | 10.3 | 6.5 | - | 9.9 | 3.1 | 5.5 | 5.5 | 4.5 | 42.5 | 1.9 |
| | 12 | - | - | 7.4 | 0.8 | 12.5 | 8.5 | 12.0 | 2.7 | 1.4 | 6.5 | 6.5 | 2.2 | 8.2 | 37.7 |

TABLE 4.11 f

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 3*3
POST-CLASSIFICATION FILTER: MEDIAN 3*3

Cell values normalised by row.

| | | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|----|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| NCC CLASS | 0 | 97.6 | - | 0.3 | 0.2 | 0.1 | 0.5 | 0.1 | 0.3 | 0.4 | 0.2 | 0.2 | 0.1 | 0.1 |
| | 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| | 2 | - | - | 24.7 | 6.5 | 2.6 | 21.9 | 2.8 | 11.6 | 9.6 | 4.4 | 9.6 | 2.9 | 3.5 |
| | 3 | - | 0.4 | 11.6 | 37.3 | 4.0 | 10.9 | - | 15.9 | 9.9 | 0.9 | 7.9 | 1.4 | - |
| | 4 | - | 0.5 | 3.5 | 2.3 | 54.5 | 20.2 | 0.9 | 7.7 | 0.1 | 5.4 | 0.8 | 3.6 | 0.5 |
| | 5 | - | - | 7.9 | 0.9 | 5.1 | 61.5 | 0.4 | 8.4 | 3.8 | 7.9 | 2.4 | 0.4 | 1.1 |
| | 6 | - | - | 0.2 | - | 3.2 | 1.6 | 76.7 | - | - | 0.1 | - | 0.9 | 17.4 |
| | 7 | - | - | 9.8 | 9.4 | 0.2 | 8.2 | - | 48.3 | 14.9 | 2.4 | 4.3 | 1.8 | 0.6 |
| | 8 | - | 0.2 | 4.4 | 10.9 | - | 2.7 | - | 6.4 | 69.8 | 0.6 | 3.8 | 1.0 | - |
| | 9 | - | 0.1 | 7.0 | 7.0 | 7.3 | 18.6 | 1.6 | 17.6 | 4.5 | 28.4 | 1.7 | 3.2 | 2.9 |
| | 10 | - | 0.1 | 5.6 | 4.8 | 1.1 | 2.3 | - | 7.1 | 19.5 | 1.5 | 55.9 | 2.3 | - |
| | 11 | - | - | 2.1 | 8.5 | 12.4 | 8.8 | - | 11.8 | 4.8 | 6.0 | 3.2 | 41.1 | 1.2 |
| | 12 | - | - | 3.6 | 0.5 | 11.7 | 10.6 | 11.4 | 4.3 | 1.6 | 5.1 | 1.7 | 7.9 | 41.6 |

TABLE 4.11 g

Normalised correspondence table
 between the NCC 1984 Field survey map
 and one of the Thematic Mapper classmaps.
 Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
 CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 3*3
 POST-CLASSIFICATION FILTER: MEDIAN 5*5

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.2 | 0.2 | 0.1 | 0.6 | 0.1 | 0.4 | 0.4 | 0.1 | 0.2 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 22.7 | 6.4 | 2.4 | 24.5 | 3.0 | 13.3 | 10.1 | 4.2 | 8.7 | 1.7 | 3.2 |
| 3 | - | - | 8.9 | 38.4 | 5.3 | 12.5 | - | 17.3 | 9.5 | 0.7 | 7.4 | - | - |
| 4 | - | - | 1.2 | 1.1 | 57.9 | 25.8 | - | 6.0 | 0.3 | 4.1 | 0.6 | 3.0 | - |
| 5 | - | - | 5.4 | 0.4 | 3.7 | 66.5 | 0.4 | 10.5 | 4.4 | 6.1 | 1.8 | 0.2 | 0.5 |
| 6 | - | - | - | - | 1.6 | 2.1 | 80.3 | - | - | 0.2 | - | 0.7 | 15.0 |
| 7 | - | - | 8.0 | 8.7 | 0.2 | 7.9 | - | 53.4 | 15.5 | 1.9 | 2.8 | 1.3 | 0.3 |
| 8 | - | 0.1 | 3.7 | 9.8 | 0.1 | 3.1 | - | 7.0 | 72.3 | 0.4 | 3.2 | 0.4 | - |
| 9 | - | - | 4.4 | 6.8 | 7.6 | 19.7 | 1.8 | 21.4 | 4.9 | 27.1 | 1.7 | 2.7 | 2.0 |
| 10 | - | - | 4.7 | 2.8 | 0.9 | 2.0 | - | 6.8 | 20.7 | 2.1 | 59.1 | 0.9 | - |
| 11 | - | - | 0.2 | 6.5 | 11.3 | 11.7 | - | 13.7 | 6.0 | 6.7 | 2.8 | 40.1 | 1.0 |
| 12 | - | - | 0.9 | 0.6 | 9.8 | 13.0 | 9.3 | 6.0 | 2.1 | 4.3 | 0.3 | 7.8 | 45.9 |

TABLE 4.11 h

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 3*3
POST-CLASSIFICATION FILTER: MEDIAN 7*7

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|-----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 0 | 97.6 | - | 0.2 | 0.2 | 0.1 | 0.6 | 0.1 | 0.4 | 0.4 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 21.1 | 6.6 | 2.1 | 27.2 | 3.3 | 14.3 | 10.3 | 3.9 | 7.8 | 0.9 | 2.6 | - |
| 3 | - | - | 7.0 | 36.5 | 6.9 | 14.8 | - | 19.3 | 8.1 | 1.7 | 5.6 | - | - | - |
| 4 | - | - | 0.9 | 0.5 | 56.1 | 31.9 | - | 5.6 | 0.1 | 4.3 | - | 0.7 | - | - |
| 5 | - | - | 3.3 | 0.3 | 2.6 | 68.4 | 0.5 | 13.0 | 5.3 | 5.1 | 1.4 | - | 0.1 | - |
| 6 | - | - | - | - | 1.0 | 1.5 | 82.7 | - | - | 0.1 | - | 0.6 | 14.1 | - |
| 7 | - | - | 5.7 | 7.5 | 0.2 | 8.0 | - | 59.4 | 15.0 | 1.1 | 2.2 | 0.8 | 0.1 | - |
| 8 | - | 0.1 | 2.9 | 9.1 | - | 3.8 | - | 6.9 | 74.9 | 0.1 | 1.9 | 0.2 | - | - |
| 9 | - | - | 2.6 | 6.0 | 7.8 | 20.5 | 2.3 | 23.9 | 5.5 | 25.9 | 1.7 | 2.4 | 1.3 | - |
| 10 | - | - | 4.3 | 1.9 | 0.7 | 2.1 | - | 6.7 | 21.6 | 2.3 | 60.1 | 0.2 | - | - |
| 11 | - | - | - | 5.8 | 10.2 | 12.3 | - | 16.2 | 7.4 | 8.9 | 1.4 | 37.9 | - | - |
| 12 | - | - | - | 0.2 | 10.6 | 13.1 | 10.4 | 6.8 | 1.6 | 4.3 | 0.3 | 7.0 | 45.7 | - |

TABLE 4.11 i

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 5*5
POST-CLASSIFICATION FILTER: NONE

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.4 | 0.2 | 0.1 | 0.5 | 0.1 | 0.2 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | 0.1 | 31.9 | 6.5 | 1.9 | 17.4 | 2.1 | 8.6 | 9.2 | 4.4 | 9.1 | 4.6 | 4.2 |
| 3 | - | 1.9 | 16.7 | 39.3 | 1.5 | 5.4 | - | 16.4 | 10.4 | 2.6 | 3.8 | 2.1 | - |
| 4 | - | 3.3 | 10.3 | 2.7 | 47.7 | 14.8 | 1.6 | 4.4 | 0.6 | 7.4 | 0.8 | 4.8 | 1.7 |
| 5 | - | 0.1 | 13.9 | 1.5 | 6.0 | 55.1 | 0.5 | 4.2 | 1.6 | 11.9 | 2.6 | 0.8 | 1.7 |
| 6 | 0.1 | - | 1.2 | - | 3.2 | 1.3 | 71.7 | - | - | 0.2 | - | 0.7 | 21.7 |
| 7 | - | 0.2 | 15.3 | 11.4 | 0.8 | 7.8 | - | 41.8 | 12.4 | 5.2 | 3.2 | 1.5 | 0.5 |
| 8 | - | 0.5 | 6.4 | 13.3 | - | 3.6 | - | 5.5 | 65.3 | 1.5 | 3.3 | 0.6 | - |
| 9 | - | 0.2 | 12.5 | 6.7 | 5.3 | 15.8 | 1.6 | 10.6 | 3.1 | 34.4 | 1.1 | 4.2 | 4.4 |
| 10 | - | - | 8.5 | 6.6 | 0.2 | 2.4 | - | 4.4 | 16.6 | 0.3 | 58.0 | 2.9 | 0.1 |
| 11 | 0.3 | - | 12.8 | 5.8 | 8.4 | 6.8 | - | 8.0 | 2.3 | 7.1 | 6.0 | 41.5 | 1.0 |
| 12 | - | - | 10.6 | 1.4 | 12.5 | 6.3 | 10.3 | 1.6 | 2.1 | 4.0 | 0.9 | 6.2 | 44.1 |

TABLE 4.11 k

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 5*5
POST-CLASSIFICATION FILTER: MEDIAN 5*5

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|-----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 0 | 97.6 | - | 0.3 | 0.2 | 0.1 | 0.6 | 0.1 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 28.1 | 7.6 | 2.0 | 22.8 | 2.5 | 9.9 | 10.2 | 3.0 | 7.6 | 2.3 | 3.9 | - |
| 3 | - | - | 11.6 | 46.7 | 2.7 | 8.9 | - | 19.9 | 8.4 | 1.1 | 0.7 | - | - | - |
| 4 | - | 0.2 | 4.4 | 2.2 | 55.8 | 21.3 | - | 6.8 | 0.5 | 4.2 | 0.7 | 3.9 | - | - |
| 5 | - | - | 7.8 | 1.7 | 5.0 | 65.8 | 0.6 | 5.5 | 2.6 | 9.3 | 1.1 | 0.1 | 0.6 | - |
| 6 | - | - | - | - | 1.7 | 2.5 | 77.5 | - | - | 0.1 | - | - | 18.3 | - |
| 7 | - | - | 11.5 | 10.7 | 0.1 | 11.0 | - | 48.5 | 13.5 | 3.5 | 0.5 | 0.5 | 0.3 | - |
| 8 | - | 0.3 | 4.5 | 13.1 | - | 4.6 | - | 6.1 | 69.6 | 0.4 | 1.3 | - | - | - |
| 9 | - | - | 7.4 | 6.4 | 5.0 | 18.9 | 1.7 | 14.8 | 4.3 | 34.0 | 1.0 | 3.1 | 3.3 | - |
| 10 | - | - | 5.7 | 4.2 | 0.2 | 2.7 | - | 5.1 | 17.5 | 0.5 | 63.0 | 1.1 | - | - |
| 11 | - | - | 5.3 | 4.9 | 12.5 | 9.1 | - | 10.4 | 4.2 | 8.8 | 6.1 | 38.5 | 0.2 | - |
| 12 | - | - | 4.1 | 2.7 | 14.6 | 10.6 | 5.7 | 3.2 | 0.2 | 1.9 | 0.6 | 5.2 | 51.3 | - |

TABLE 4.11 1

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 5*5
POST-CLASSIFICATION FILTER: MEDIAN 7*7

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|-----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 0 | 97.6 | - | 0.3 | 0.2 | 0.1 | 0.6 | 0.1 | 0.4 | 0.4 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 26.6 | 8.2 | 1.9 | 24.9 | 2.7 | 10.7 | 10.6 | 2.7 | 6.6 | 1.5 | 3.5 | - |
| 3 | - | - | 9.1 | 48.3 | 3.1 | 11.9 | - | 19.1 | 7.2 | 1.0 | 0.4 | - | - | - |
| 4 | - | - | 3.3 | 1.9 | 54.7 | 25.2 | - | 10.0 | 0.7 | 1.7 | - | 2.5 | - | - |
| 5 | - | - | 5.0 | 1.8 | 3.6 | 71.5 | 0.6 | 6.5 | 3.2 | 7.3 | 0.4 | - | 0.2 | - |
| 6 | - | - | - | - | 0.2 | 2.8 | 79.4 | - | - | - | - | - | 17.6 | - |
| 7 | - | - | 9.6 | 10.5 | 0.1 | 12.1 | - | 51.6 | 13.1 | 2.8 | 0.2 | - | - | - |
| 8 | - | 0.1 | 3.9 | 12.9 | - | 5.1 | - | 6.5 | 70.8 | 0.1 | 0.5 | - | - | - |
| 9 | - | - | 5.3 | 5.8 | 4.8 | 20.5 | 2.0 | 16.8 | 4.8 | 34.0 | 0.9 | 2.7 | 2.5 | - |
| 10 | - | - | 5.0 | 3.8 | 0.3 | 2.7 | - | 5.1 | 18.5 | 0.1 | 64.2 | 0.2 | - | - |
| 11 | - | - | 2.5 | 3.8 | 14.1 | 11.7 | - | 11.8 | 4.7 | 10.2 | 4.2 | 36.9 | - | - |
| 12 | - | - | 0.3 | 4.0 | 16.0 | 12.7 | 1.9 | 2.5 | 0.2 | 2.5 | 0.2 | 4.9 | 54.9 | - |

TABLE 4.11 m

Normalised correspondence table
 between the NCC 1984 Field survey map
 and one of the Thematic Mapper classmaps.
 Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
 CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 7*7
 POST-CLASSIFICATION FILTER: NONE

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.4 | 0.3 | 0.1 | 0.5 | 0.1 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | 0.1 | - | 33.6 | 8.0 | 1.6 | 15.8 | 1.8 | 11.2 | 7.7 | 5.0 | 5.7 | 5.4 | 4.1 |
| 3 | - | 2.0 | 11.5 | 57.8 | 3.5 | 4.2 | - | 8.1 | 3.8 | 1.5 | 5.6 | 2.1 | - |
| 4 | - | - | 10.2 | 2.5 | 52.9 | 4.7 | - | 10.2 | 0.9 | 11.8 | 0.6 | 4.8 | 1.5 |
| 5 | - | 0.1 | 9.1 | 2.1 | 1.5 | 62.9 | 0.1 | 10.1 | 2.5 | 7.6 | 0.5 | 2.2 | 1.3 |
| 6 | 1.0 | - | 2.3 | - | 3.2 | - | 78.3 | - | - | - | - | 0.2 | 14.9 |
| 7 | - | 0.1 | 13.4 | 15.3 | 0.8 | 6.9 | - | 47.3 | 10.8 | 2.6 | 2.6 | 0.2 | 0.1 |
| 8 | - | 0.3 | 3.6 | 12.9 | 0.2 | 3.9 | - | 5.0 | 71.2 | 0.8 | 1.7 | 0.5 | - |
| 9 | - | - | 7.9 | 2.8 | 7.3 | 15.1 | 0.4 | 18.9 | 2.1 | 37.6 | 0.3 | 4.2 | 3.5 |
| 10 | - | - | 6.5 | 5.3 | 0.1 | 1.7 | - | 3.3 | 12.2 | 0.1 | 68.3 | 2.5 | - |
| 11 | 0.7 | - | 9.5 | 12.8 | 5.9 | 7.8 | - | 10.5 | 6.8 | 5.5 | 1.1 | 39.2 | 0.2 |
| 12 | - | - | 6.6 | 0.9 | 8.2 | 5.7 | 9.2 | 12.0 | 0.2 | 5.4 | 0.9 | 5.5 | 45.3 |

TABLE 4.11 n

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 7*7
POST-CLASSIFICATION FILTER: MEDIAN 3*3

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|------|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.3 | 0.3 | 0.1 | 0.5 | 0.1 | 0.4 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | - | 32.2 | 8.5 | 1.6 | 17.6 | 2.0 | 12.3 | 7.7 | 4.7 | 5.4 | 4.2 | 3.8 |
| 3 | - | 1.4 | 8.5 | 64.0 | 4.8 | 3.3 | - | 7.5 | 4.4 | 1.7 | 3.5 | 0.9 | - |
| 4 | - | - | 4.9 | 2.2 | 58.9 | 5.8 | - | 11.9 | 0.3 | 11.6 | 0.7 | 3.5 | 0.2 |
| 5 | - | - | 7.1 | 2.0 | 1.3 | 67.2 | 0.1 | 10.7 | 2.3 | 6.7 | 0.3 | 1.6 | 0.7 |
| 6 | 0.1 | - | 1.4 | - | 3.9 | - | 82.2 | - | - | 0.1 | - | 0.2 | 12.1 |
| 7 | - | - | 11.9 | 15.9 | 0.5 | 6.9 | - | 50.6 | 10.2 | 2.0 | 2.1 | - | - |
| 8 | - | 0.3 | 2.9 | 12.5 | 0.1 | 4.4 | - | 5.0 | 73.0 | 0.6 | 1.0 | 0.3 | - |
| 9 | - | - | 5.6 | 2.2 | 6.5 | 16.6 | 0.5 | 21.8 | 2.3 | 38.0 | 0.3 | 3.5 | 2.9 |
| 10 | - | - | 5.7 | 4.9 | 0.2 | 2.0 | - | 3.2 | 13.2 | 0.1 | 68.9 | 1.8 | - |
| 11 | - | - | 7.6 | 14.5 | 7.5 | 8.4 | - | 10.6 | 7.7 | 4.8 | 0.4 | 38.4 | - |
| 12 | - | - | 3.5 | 0.9 | 8.4 | 6.8 | 6.8 | 15.2 | 0.2 | 4.7 | 0.8 | 5.5 | 47.2 |

TABLE 4.11 o

Normalised correspondence table
 between the NCC 1984 Field survey map
 and one of the Thematic Mapper classmaps.
 Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
 CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 7*7
 POST-CLASSIFICATION FILTER: MEDIAN 5*5

Cell values normalised by row.

| NCC CLASS | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|--|-------|------|------|------|------|------|------|------|------|------|------|-----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0 | 97.6 | - | 0.3 | 0.3 | 0.1 | 0.5 | 0.1 | 0.4 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 |
| 1 | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - |
| 2 | - | 31.1 | 8.9 | 1.5 | 19.4 | 2.2 | 13.4 | 7.8 | 4.0 | 5.0 | 3.2 | 3.5 | - |
| 3 | - | 7.2 | 65.7 | 7.3 | 5.1 | - | 7.0 | 4.2 | 1.2 | 2.3 | - | - | - |
| 4 | - | 2.5 | 2.3 | 60.8 | 7.8 | - | 14.3 | 0.5 | 10.6 | - | 1.2 | - | - |
| 5 | - | 5.6 | 1.8 | 0.8 | 70.7 | 0.1 | 11.4 | 2.3 | 5.9 | 0.2 | 0.9 | 0.3 | - |
| 6 | - | 0.2 | - | 3.7 | - | 85.6 | - | - | 0.2 | - | 0.3 | 10.0 | - |
| 7 | - | 10.0 | 16.2 | 0.4 | 7.9 | - | 52.4 | 10.2 | 1.4 | 1.4 | - | - | - |
| 8 | - | 0.2 | 2.6 | 12.4 | 0.1 | 4.6 | 4.6 | 74.4 | 0.3 | 0.6 | 0.2 | - | - |
| 9 | - | 4.1 | 1.7 | 5.8 | 17.1 | 0.6 | 24.2 | 2.4 | 38.1 | 0.3 | 3.1 | 2.4 | - |
| 10 | - | 4.7 | 3.5 | 0.2 | 2.4 | - | 3.3 | 14.2 | 0.1 | 70.8 | 0.8 | - | - |
| 11 | - | 3.1 | 16.0 | 8.5 | 10.7 | - | 11.7 | 7.0 | 4.7 | 0.7 | 37.6 | - | - |
| 12 | - | 2.2 | 1.7 | 7.6 | 8.2 | 5.2 | 17.6 | - | 2.4 | 0.2 | 5.1 | 49.8 | - |

TABLE 4.11 p

Normalised correspondence table
between the NCC 1984 Field survey map
and one of the Thematic Mapper classmaps.
Classes refer to Level II, Table 4.1

CONFUSION MATRIX: NCC 1984 VEGETATION SURVEY AND
CLASSIFIED LANDSAT 5 TM DATA 22 JULY 1984

PRE-CLASSIFICATION FILTER: MEDIAN 7*7
POST-CLASSIFICATION FILTER: MEDIAN 7*7

Cell values normalised by row.

| | | PREDICTED CLASS: CLASSIFIED LANDSAT TM DATA. | | | | | | | | | | | | |
|--------------|----|--|------|------|------|------|------|------|------|------|------|------|------|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| NCC CLASS | 0 | 97.6 | 0 | 0.2 | 0.3 | 0.1 | 0.6 | 0.1 | 0.4 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 |
| | 1 | - | 100 | - | - | - | - | - | - | - | - | - | - | - |
| | 2 | - | 30.1 | 9.1 | 1.6 | 20.9 | 2.5 | 14.0 | 7.9 | 3.3 | 3.3 | 4.7 | 2.7 | 3.2 |
| | 3 | - | 5.6 | 66.9 | 10.2 | 6.2 | - | 6.5 | 3.6 | - | - | 1.0 | - | - |
| | 4 | - | 1.4 | 2.0 | 61.4 | 8.7 | - | 16.6 | 1.5 | 7.9 | - | - | 0.5 | - |
| | 5 | - | 4.3 | 1.3 | 0.3 | 73.2 | - | 12.4 | 2.5 | 5.4 | 0.1 | 0.1 | 0.4 | 0.1 |
| | 6 | - | - | - | 2.8 | - | 89.6 | - | - | 0.2 | - | - | 0.5 | 6.9 |
| | 7 | - | 7.4 | 15.9 | 0.4 | 9.8 | - | 54.3 | 9.8 | 1.2 | 1.2 | 1.1 | - | - |
| | 8 | - | 2.0 | 12.4 | 0.1 | 5.1 | - | 4.5 | 75.6 | - | - | 0.4 | - | - |
| | 9 | - | 2.9 | 1.3 | 5.2 | 17.7 | 0.7 | 26.6 | 2.4 | 38.3 | 0.3 | 0.3 | 2.7 | 1.9 |
| | 10 | - | 4.4 | 2.8 | 0.2 | 2.2 | - | 3.3 | 15.1 | 0.3 | 71.7 | 0.1 | - | - |
| | 11 | - | 0.3 | 16.4 | 10.1 | 10.2 | - | 12.9 | 7.2 | 5.8 | 0.4 | 36.9 | - | - |
| | 12 | - | 1.1 | 2.8 | 6.8 | 8.1 | 3.6 | 19.6 | - | 1.3 | - | 4.4 | 52.2 | - |