

23.18 1878.

Three-Point Stations:

St. Tillman - G. Thompson, Cal.

" Lymons - Kahler, Nev & Oregon

COMPUTATIONS OF DISTANCES.

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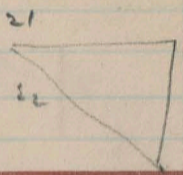
| No. of Triangle.                        | OBJECTS.                     | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|---|------------------------------|-------------------|-----------|---------------|-------------|
|   | Downieville Butte - Ingalls. |                   |           |               | 4.648 8166  |
| 2 Top 4<br>Downieville Butte<br>Ingalls |                              |                   |           | 51 28 14      | 0.106 6333  |
|   |                              |                   |           | 49 20 34      | 9.880 0248  |
|   |                              |                   |           | 79 11 12      | 9.992 2192  |
|   | 2 Topog 4 to Ingalls         |                   |           |               | 4.635 4747  |
|   | " to Downieville             |                   |           |               | 4.747 6698  |
|   | Ingalls - Lassen             |                   |           |               | 4.967 0356  |
| 2 Top 4<br>Ingalls<br>Lassen            |                              |                   |           | 108 33 18     | 0.023 1838  |
|   |                              |                   |           | 45 13 29      | 9.851 2819  |
|   |                              |                   |           | 26 13 13      | 9.645 2372  |
|   | 2 Topog 4 to Lassen          |                   |           |               | 4.841 4004  |
|   | " to Ingalls                 |                   |           |               | 4.635 4559  |
|   | Downieville - Lassen         |                   |           |               | 5.091 5334  |
| 2 Top 4<br>Downieville<br>Lassen        |                              |                   |           | 160 1 36      | 0.466 5040  |
|   |                              |                   |           | 11 4 19       | 9.283 9734  |
|   |                              |                   |           | 8 54 77       | 9.189 6636  |
|   | Topog 4 to Lassen            |                   |           |               | 4.841 4408  |
|   | " to Downieville             |                   |           |               | 4.747 6510  |
|   | Downieville - Thompson       |                   |           |               | 4.872 3862  |
| Topog 7<br>Downieville<br>Thompson      |                              |                   |           | 127 7 9       | 0.098 3449  |
|   |                              |                   |           | 21 31 17      | 9.564 4867  |
|   |                              |                   |           | 31 21 34      | 9.716 3447  |
|   | Topog 7 to Thompson          |                   |           |               | 4.535 2178  |
|   | " to Downieville             |                   |           |               | 4.687 0528  |
|   | Thompson to Lassen           |                   |           |               | 4.926 103   |
| Topog 7<br>Thompson<br>Lassen           |                              |                   |           | 85 38 48      | 0.001 255   |
|   |                              |                   |           | 70 26 22      | 9.974 184   |
|   |                              |                   |           | 23 34 50      | 9.607 844   |
|   | Topog 7 to Lassen            |                   |           |               | 4.901 542   |
|   | " to Thompson                |                   |           |               | 4.535 202   |
|   | Downieville - Lassen         |                   |           |               | 5.091 5315  |
| Topog 7                                 |                              |                   |           | 147 13 57     | 0.266 617   |
|   |                              |                   |           | 20 27 14      | 9.543 889   |
|   |                              |                   |           | 12 18 49      | 9.228 916   |
|   | Topog 7 to Lassen            |                   |           |               | 4.901 538   |
|   | Topog " to Downieville       |                   |           |               | 4.687 064   |

| No. of Triangle. | OBJECTS.                | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|-------------------------|-------------------|-----------|---------------|-------------|
|                  | Downieville - Ingalls   |                   |           |               | 4.64882     |
|                  | Claremont               |                   | 75        | 44 7          | 0.01360     |
|                  | Downieville             |                   | 40        | 35 42         | 9.81338     |
|                  | Ingalls                 |                   | 63        | 40 11         | 9.95243     |
|                  | Claremont - Ingalls     |                   |           |               | 4.47580     |
|                  | " - Downieville         |                   |           |               | 4.61485     |
|                  | Ingalls - Lassen        |                   |           |               | 4.96704     |
|                  | Claremont               |                   | 100       | 46 41         | 0.00773     |
|                  | Ingalls                 |                   | 60        | 44 30         | 9.94073     |
|                  | Lassen                  |                   | 18        | 28 49         | 9.50103     |
|                  | Claremont - Lassen      |                   |           |               | 4.41550     |
|                  | " - Ingalls             |                   |           |               | 4.47580     |
|                  | Downieville - Lassen    |                   |           |               | 5.09153     |
|                  | Claremont               |                   | 176       | 30 48         | 1.21529     |
|                  | Downieville             |                   | 2         | 19 28         | 8.60808     |
|                  | Lassen                  |                   | 1         | 9 44          | 8.30714     |
|                  | Claremont - Downieville |                   |           |               | 4.61496     |
|                  | " - Lassen              |                   |           |               | 4.91490     |
|                  | Downieville - Ingalls   |                   |           |               | 4.64882     |
|                  | Topog 2                 |                   | 43        | 59 28         | 0.15830     |
|                  | Downieville             |                   | 54        | 46 12         | 9.91169     |
|                  | Ingalls                 |                   | 81        | 19 20         | 9.99800     |
|                  | Topog 2 - Ingalls       |                   |           |               | 4.71881     |
|                  | " - Downieville         |                   |           |               | 4.80212     |
|                  | Ingalls - Lassen        |                   |           |               | 4.96704     |
|                  | Claremont               |                   | 103       | 37 47         | 0.01297     |
|                  | Ingalls                 |                   | 43        | 5 20          | 9.83450     |
|                  | Lassen                  |                   | 33        | 16 53         | 9.73938     |
|                  | Topog 2 - Lassen        |                   |           |               | 4.81395     |
|                  | " - Ingalls             |                   |           |               | 4.71883     |
|                  | Downieville - Lassen    |                   |           |               | 5.09153     |
|                  | Claremont               |                   | 147       | 37 18         | 0.27118     |
|                  | Downieville             |                   | 16        | 24 56         | 9.45118     |
|                  | Lassen                  |                   | 15        | 57 46         | 9.43935     |
|                  | Topog 2 - Lassen        |                   |           |               | 4.81389     |
|                  | " - Downieville         |                   |           |               | 4.80206     |

| No. of Triangle.                               | OBJECTS.                         | SPHERICAL ANGLES. | Sph. Exc.   | PLANE ANGLES.       | LOGARITHMS.        |
|--|----------------------------------|-------------------|-------------|---------------------|--------------------|
| <del>Topog 5<br/>Downieville<br/>Ingalls</del> | <del>Downieville - Ingalls</del> | <del></del>       | <del></del> | <del>47 13 8</del>  | <del>4.64882</del> |
|  |                                  |                   |             | <del>48 29 55</del> | <del>0.13433</del> |
|  |                                  |                   |             | <del>84 17 37</del> | <del>9.87437</del> |
| <del>Topog 5<br/>" -</del>                     | <del>Ingalls - Downieville</del> | <del></del>       | <del></del> | <del>4.65882</del>  | <del>4.78089</del> |
|  |                                  |                   |             | <del>4.78089</del>  | <del>4.78089</del> |
| <del>Topog 5<br/>Ingalls<br/>Lassen</del>      | <del>Ingalls - Lassen</del>      | <del></del>       | <del></del> | <del>111 52 3</del> | <del>4.96704</del> |
|  |                                  |                   |             | <del>40 07 4</del>  | <del>0.03243</del> |
|  |                                  |                   |             | <del>28 50 53</del> | <del>9.80913</del> |
| <del>Topog 5<br/>" -</del>                     | <del>Lassen - Ingalls</del>      | <del></del>       | <del></del> | <del>4.80820</del>  | <del>4.66873</del> |
|  |                                  |                   |             | <del>4.66873</del>  | <del>4.66873</del> |
| <del>Topog 5<br/>Downieville<br/>Lassen</del>  | <del>Downieville - Lassen</del>  | <del></del>       | <del></del> | <del>159 5 14</del> | <del>5.09153</del> |
|  |                                  |                   |             | <del>10 12 59</del> | <del>0.44740</del> |
|  |                                  |                   |             | <del>10 41 47</del> | <del>9.25683</del> |
| <del>Topog 5<br/>" -</del>                     | <del>Lassen - Downieville</del>  | <del></del>       | <del></del> | <del>4.78580</del>  | <del>4.80932</del> |
|  |                                  |                   |             | <del>4.80932</del>  | <del>4.80932</del> |
|  |                                  |                   |             |                     |                    |
| Topog 5<br>Downieville<br>Ingalls              | Downieville - Ingalls            |                   |             | 47 13 8             | 4.64882            |
|  |                                  |                   |             | 49 8 30             | 0.13433            |
|  |                                  |                   |             | 83 38 22            | 9.87872            |
| Topog 5<br>" -                                 | Ingalls - Downieville            |                   |             | 4.66187             | 4.78046            |
|  |                                  |                   |             | 4.78046             | 4.78046            |
| Topog 5<br>Ingalls<br>Lassen                   | Ingalls - Lassen                 |                   |             | 111 52 3            | 4.96704            |
|  |                                  |                   |             | 40 46 19            | 0.03243            |
|  |                                  |                   |             | 27 21 38            | 9.81495            |
| Topog 5<br>" -                                 | Lassen - Ingalls                 |                   |             | 4.81442             | 4.66185            |
|  |                                  |                   |             | 4.66185             | 4.66185            |
| Topog 5<br>Downieville<br>Lassen               | Downieville - Lassen             |                   |             | 159 5 14            | 5.09153            |
|  |                                  |                   |             | 10 52 14            | 0.44740            |
|  |                                  |                   |             | 10 2 32             | 9.27552            |
| Topog 5<br>" -                                 | Lassen - Downieville             |                   |             | 4.81443             | 4.78043            |
|  |                                  |                   |             | 4.78043             | 4.78043            |

| No. of Triangle. | OBJECTS.                                  | SPHERICAL ANGLES.                      | Sph. Exc. | PLANE ANGLES.                              | LOGARITHMS.                              |
|------------------|---|--|-----------|--|--|
|                  | Harkness<br>Downieville<br>Thompson       | Downieville - Thompson                 |           | 42 20 36.36<br>36 39 40.38<br>100 59 44.46 | 4.87239<br>0.17162<br>9.77603<br>9.99195 |
|                  |   | Harkness - Thompson<br>" - Downieville |           |  | 4.82004<br>5.03596                       |
|                  | Harkness<br>Thompson<br>Lassen            | Thompson - Lassen                      |           | 176 17 59.59<br>0 48 7.9<br>2 53 50.52     | 4.92610<br>1.19019<br>8.14631<br>8.70876 |
|                  |   | Harkness - Lassen<br>" - Thompson      |           |  | 4.26260<br>4.82095                       |
|                  | Harkness<br>Downieville<br>Lassen         | Downieville - Lassen                   |           | 141 21 20.20<br>5 18 48.50<br>33 19 52.50  | 5.09153<br>0.20445<br>8.96667<br>9.73994 |
|                  |   | Harkness - Lassen<br>" - Downieville   |           |  | 4.26265<br>5.03592                       |
|                  | Topog. 7<br>Downieville Butte<br>Thompson | Downieville - Thompson                 |           | 127 7 9<br>21 31 17<br>31 21 34            | 4.87239<br>0.09834<br>9.56449<br>9.71634 |
|                  |   | Topog. 7 - Thompson<br>" - Downieville |           |  | 4.53522<br>4.68707                       |
|                  | Topog. 7<br>Thompson<br>Lassen Butte      | Thompson - Lassen                      |           | 85 38 48<br>70 26 22<br>23 54 50           | 4.92610<br>0.00126<br>9.97418<br>9.60784 |
|                  |   | Topog. 7 - Lassen<br>" - Thompson      |           |  | 4.90154<br>4.53520                       |
|                  | Topog. 4<br>Lassen<br>Downieville         | Lassen - Downieville                   |           | 147 13 57<br>12 18 49<br>20 27. 14         | 5.09153<br>0.26662<br>9.32892<br>9.54339 |
|                  |   | Topog. 4 - Downieville<br>" - Lassen   |           |  | 4.68707<br>4.90154                       |

| No. of Triangle. | OBJECTS.                      | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|-------------------------------|-------------------|-----------|---------------|-------------|
|                  | Downieville Butte - Ingalls   |                   |           |               | 4.64882     |
| Topog. 21        | Downieville Butte<br>Ingalls  |                   |           | 15 32 39      | 0.57189     |
|                  |                               |                   |           | 12 15 39      | 9.32708     |
|                  |                               |                   |           | 152 11 42     | 9.66882     |
|                  |                               |                   |           |               |             |
|                  | Topog. 21 - Ingalls           |                   |           |               | 4.54779     |
|                  | " - Downieville Butte         |                   |           |               | 4.88953     |
|                  | Ingalls - Thompson            |                   |           |               | 4.48034     |
| Topog. 21        | Ingalls<br>Thompson           |                   |           | 58 27 40      | 0.06942     |
|                  |                               |                   |           | 36 58 26      | 9.77924     |
|                  |                               |                   |           | 84 33 54      | 9.99804     |
|                  |                               |                   |           |               |             |
|                  | Topog. 21 - Thompson          |                   |           |               | 4.32897 ✓   |
|                  | " - Ingalls                   |                   |           |               | 4.54780 ✓   |
|                  | Downieville Butte - Thompson  |                   |           |               | 4.87239     |
| Topog. 21        | Downieville Butte<br>Thompson |                   |           | 74 0 20       | 0.01715     |
|                  |                               |                   |           | 15 57 54      | 9.43943     |
|                  |                               |                   |           | 90 1 46       | 0.00000     |
|                  |                               |                   |           |               |             |
|                  | Topog. 21 - Thompson          |                   |           |               | 4.32897     |
|                  | " - Downieville B.            |                   |           |               | 4.88954 ✓   |
|                  | Lassen - Ingalls              |                   |           |               | 4.96704     |
| Topog. 20        | Lassen Butte<br>Ingalls       |                   |           | 144 29 16     | 0.23592     |
|                  |                               |                   |           | 12 24 5       | 9.33195     |
|                  |                               |                   |           | 23 6 39       | 9.59386     |
|                  |                               |                   |           |               |             |
|                  | Topog. 20 - Ingalls           |                   |           |               | 4.53491     |
|                  | " - Lassen                    |                   |           |               | 4.79682     |
|                  | Ingalls - Thompson            |                   |           |               | 4.48034     |
| Topog. 20        | Ingalls<br>Thompson           |                   |           | 59 48 29      | 0.06331     |
|                  |                               |                   |           | 41 38 43      | 9.82251     |
|                  |                               |                   |           | 78 32 48      | 9.99126     |
|                  |                               |                   |           |               |             |
|                  | Topog. 20 - Thompson          |                   |           |               | 4.36616     |
|                  | " - Ingalls                   |                   |           |               | 4.53491     |
|                  | Thompson - Lassen             |                   |           |               | 4.92610     |
| Topog. 20        | Thompson<br>Lassen            |                   |           | 155 42 12     | 0.38568     |
|                  |                               |                   |           | 17 47 18      | 9.48502     |
|                  |                               |                   |           | 6 30 30       | 9.05442     |
|                  |                               |                   |           |               |             |
|                  | Topog. 20 - Lassen            |                   |           |               | 4.79680     |
|                  | " - Thompson                  |                   |           |               | 4.36619 ✓   |



Thompson  
Ingalls

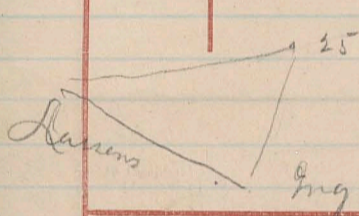


| No. of Triangle. | OBJECTS. | SPHERICAL ANGLES.      | Sph. Exc.   | PLANE ANGLES. | LOGARITHMS. |
|------------------|----------|------------------------|-------------|---------------|-------------|
|                  |          | Downieville - Thompson |             |               | 4.8723861   |
| Topog. 35        |          |                        | appr. -5.50 | 37 0 44.25    | 0.2204097   |
| Downieville      |          |                        | -5.50       | 45 0 8.03     | 9.8495019   |
| Thompson         |          |                        | -5.50       | 97 59 7.72    | 9.9957683 ✓ |
|                  |          | Topog. 35 - Thompson   |             |               | 4.9422977   |
|                  |          | " - Downieville        |             |               | 5.0885641   |
|                  |          | Thompson - Lassen      |             |               | 4.9261027   |
| Topog. 35        |          |                        | -0.44       | 58 50 3.56    | 0.0676914   |
| Thompson         |          |                        | -0.44       | 3 48 45.54    | 8.8227838   |
| Lassen           |          |                        | -0.44       | 117 21 10.90  | 9.9484982   |
|                  |          | Topog. 35 - Lassen     |             |               | 3.8165779   |
|                  |          | " - Thompson           |             |               | 4.9422923   |
|                  |          | Downieville - Lassen   |             |               | 5.0915334   |
| Topog. 35        |          |                        | -0.73       | 95 50 53.02   | 0.0022662   |
| Downieville      |          |                        | -0.73       | 3 1. 39.52    | 8.7227801   |
| Lassen           |          |                        | -0.73       | 81 7 27.46    | 9.9947681   |
|                  |          | Topog. 35 - Lassen     |             |               | 3.8165797   |
|                  |          | " - Downieville        |             |               | 5.0885677   |
|                  |          | Lassen - Ingalls       |             |               | 4.9670336   |
| Topog. 26        |          |                        | appr. 3.01  | 102 59 6.99   | 0.0712513   |
| Lassen           |          |                        | 3.01        | 57 17 52.48   | 9.9250897   |
| Ingalls          |          |                        | 3.00        | 19 43 10.231  | 9.5281102 ✓ |
|                  |          | Topog. 26 - Ingalls    |             |               | 4.9033360   |
|                  |          | " - Lassen             |             |               | 4.5063974 ✓ |
|                  |          | Ingalls - Fredouyer    |             |               | 4.8868878   |
| Topog. 26        |          |                        | 2.14        | 68 51 17.86   | 0.0302719   |
| Ingalls          |          |                        | 2.15        | 35 31 37.13   | 9.7642229 ✓ |
| Fredouyer        |          |                        | 2.14        | 75 37 24.01   | 9.9861952 ✓ |
|                  |          | Topog. 26 - Fredouyer  |             |               | 4.6813826 ✓ |
|                  |          | " - Ingalls            |             |               | 4.9933349 ✓ |
|                  |          | Lassen - Fredouyer.    |             |               | 4.9026156   |
| Topog. 26        |          |                        | 0.18        | 171 50 29.82  | 0.8479872 ✓ |
| Lassen           |          |                        | 0.19        | 4. 53 26.76   | 8.9308666 ✓ |
| Fredouyer        |          |                        | 0.18        | 3. 16. 10.42  | 8.7557624 ✓ |
|                  |          | Topog. 26 - Fredouyer  |             |               | 4.6874633 ✓ |
|                  |          | " - Lassen             |             |               | 4.5063651 ✓ |



| No. of Triangle. | OBJECTS. | SPHERICAL ANGLES.             | Sph. Exc.           | PLANE ANGLES. | LOGARITHMS. |
|------------------|----------|-------------------------------|---------------------|---------------|-------------|
|                  |          | <i>Lassen - Ingalls</i>       |                     |               | 4.9670356   |
| Topog. 28        |          |                               | <i>altm</i><br>1.61 | 132 16 31.39  | 0.1308152   |
| Lassen           |          |                               | 1.62                | 25 18 23.19   | 9.6308950   |
| Ingalls          |          |                               | 1.62                | 22 25 5.42    | 9.5813392   |
|                  |          | <i>Topog. 28 - Ingalls</i>    |                     |               | 4.7287458   |
|                  |          | <i>" - Lassen</i>             |                     |               | 4.6791900   |
|                  |          | <i>Ingalls - Fredonyer</i>    |                     |               | 4.8868878   |
| Topog. 28        |          |                               | 1.78                | 105 1 43.22   | 0.0151145   |
| Ingalls          |          |                               | 1.78                | 32 49 28.30   | 9.7340538   |
| Fredonyer        |          |                               | 1.77                | 42 8 48.48    | 9.8267436   |
|                  |          | <i>Topog. 28. - Fredonyer</i> |                     |               | 4.6360561   |
|                  |          | <i>" - Ingalls</i>            |                     |               | 4.7287459   |
|                  |          | <i>Fredonyer - Lassen</i>     |                     |               | 4.9026156   |
| Topog. 28        |          |                               | 1.57                | 122 41 40.43  | 0.0749139   |
| Fredonyer        |          |                               | 1.58                | 39 12 28.92   | 9.7026662   |
| Lassen           |          |                               | 1.58                | 27 15 58.85   | 9.6585265   |
|                  |          | <i>Topog. 28 - Lassen</i>     |                     |               | 4.6791897   |
|                  |          | <i>" - Fredonyer</i>          |                     |               | 4.6360560   |
|                  |          | <i>Lassen - Ingalls.</i>      |                     |               | 4.9670356   |
| Topog. 27        |          |                               | <i>altm</i><br>1.44 | 134 27 4.56   | 0.1463952   |
| Lassen           |          |                               | 1.45                | 33 29 42.90   | 9.7418351   |
| Ingalls          |          |                               | 1.44                | 12 3 12.54    | 9.3197817   |
|                  |          | <i>Topog. 27 - Ingalls</i>    |                     |               | 4.8552659   |
|                  |          | <i>" - Lassen</i>             |                     |               | 4.4332825   |
|                  |          | <i>Ingalls - Fredonyer</i>    |                     |               | 4.8868878   |
| Topog. 27        |          |                               | 2.98                | 73 39 30.02   | 0.0179093   |
| Ingalls          |          |                               | 2.98                | 43 11 20.15   | 9.8353170   |
| Fredonyer        |          |                               | 2.97                | 63 9 9.83     | 9.9504688   |
|                  |          | <i>Topog. 27 - Fredonyer</i>  |                     |               | 4.7401141   |
|                  |          | <i>" - Ingalls</i>            |                     |               | 4.8552659   |
|                  |          | <i>Fredonyer - Lassen</i>     |                     |               | 4.9026156   |
| Topog. 27        |          |                               | 0.53                | 151 53 20.45  | 0.3268122   |
| Fredonyer        |          |                               | 0.55                | 9 11 59.20    | 9.2037870   |
| Lassen           |          |                               | 0.54                | 18 54 40.35   | 9.5106824   |
|                  |          | <i>Topog. 27. - Lassen</i>    |                     |               | 4.4332148   |
|                  |          | <i>" - Fredonyer</i>          |                     |               | 4.7401102   |

| No. of Triangle. | OBJECTS.               | SPHERICAL ANGLES.                  | Sph. Exc.           | PLANE ANGLES. | LOGARITHMS.  |
|------------------|------------------------|------------------------------------|---------------------|---------------|--------------|
|                  |                        | <i>Lassen - Downieville Butte.</i> |                     |               |              |
| Topog. 30        |                        |                                    | <i>appr</i><br>1.68 | 84 39 7.32    | 5.0915334    |
| Lassen           |                        |                                    | 1.69                | 87 44 53.72   | 0.0018945    |
| Downieville B.   |                        |                                    | 1.68                | 7 35. 58.96   | 9.9996645    |
|                  |                        |                                    |                     |               | 9.1214003    |
|                  |                        | <i>Topog. 30 - Downieville B.</i>  |                     |               | 5.0930924    |
|                  |                        | <i>" - Lassen</i>                  |                     |               | 4.2148282    |
|                  |                        | <i>Downieville - Ingalls</i>       |                     |               | 4.6488166    |
| Topog. 30.       |                        |                                    | 2.41                | 14. 52 6.09   | 0.5907449    |
| Downieville      |                        |                                    | 2.41                | 30 40 13.66   | 9.7076549    |
| Ingalls.         |                        |                                    | 2.41                | 134 27 40.25  | 9.8535310    |
|                  |                        | <i>Topog. 30 - Ingalls</i>         |                     |               | 4.9472164    |
|                  |                        | <i>" - Downieville</i>             |                     |               | 5.0930925    |
|                  |                        | <i>Lassen - Ingalls</i>            |                     |               | 4.9670356    |
| Topog. 30        |                        |                                    | 1.21                | 99 31 16.29   | 0.0060242    |
| Lassen           |                        |                                    | 1.21                | 70 25 47.09   | 9.9741576    |
| Ingalls.         |                        |                                    | 1.21                | 10. 2 56.62   | 9.2417739    |
|                  |                        | <i>Topog. 30 - Ingalls</i>         |                     |               | 4.9472174    |
|                  |                        | <i>" - Lassen</i>                  |                     |               | 4.2148337    |
|                  |                        | <i>Lassen - Ingalls</i>            |                     |               | 4.9670356 ✓  |
| Topog. 25        |                        |                                    | <i>appr</i><br>3.10 | 97 19 26.90   | 0.0035581 ✓  |
| Lassen           |                        |                                    | 3.10                | 49. 45 58.17  | 9.8784343    |
| Ingalls.         | <i>to be corrected</i> |                                    | 3.11                | 33 34 34.93   | 9.7427628    |
|                  |                        | <i>Topog. 25 - Ingalls</i>         |                     |               | 4.8490280 ✓  |
|                  |                        | <i>" - Lassen</i>                  |                     |               | 4.7033565 ✓  |
|                  |                        | <i>Ingalls - Fredonyer</i>         |                     |               | 4.8868878 ✓  |
| Topog. 25        |                        |                                    | 1.66                | 91 59 28.34   | 0.0002623 ✓  |
| Ingalls          |                        |                                    | 1.65                | 21 39 57.42   | 9.5672652    |
| Fredonyer        |                        |                                    | 1.66                | 66 20 34.24   | 9.9618779    |
|                  |                        | <i>Topog. 25 - Fredonyer</i>       |                     |               | 4.4544053 ✓  |
|                  |                        | <i>" - Ingalls</i>                 |                     |               | 4.8490280 ✓  |
|                  |                        | <i>Fredonyer - Lassen</i>          |                     |               | 4.9026156 ✓  |
| Topog. 25        |                        |                                    | 0.21                | 170 40 59.79  | 0.7907749 ✓  |
| Fredonyer        |                        |                                    | 0.21                | 6. 30 36.44   | 9.0199639 ✓  |
| Lassen           |                        |                                    | 0.20                | 3. 18. 23.77  | 8.76150583 ✓ |
|                  |                        | <i>Topog. 25 - Lassen</i>          |                     |               | 4.7133544    |
|                  |                        | <i>" - Fredonyer</i>               |                     |               | 4.4544088    |



W

| No. of Triangle. | OBJECTS.                                 | SPHERICAL ANGLES.        | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|--|--------------------------|-----------|---------------|-------------|
|                  |  | Lassen - Downieville B.  |           |               | 5.0915315   |
| A                | Hough Mtn<br>Lassen<br>Downieville Butte |                          | 1.35      | 155 39 28.05  | 0.3849071   |
|                  |  |                          | 1.36      | 10 24 44.74   | 9.2579362   |
|                  |  |                          | 1.35      | 13 55 47.78   | 9.3815348   |
|                  |  | Hough Mtn - Downieville  |           |               | 4.7334748   |
|                  |  | " - Lassen               |           |               | 4.8579734   |
|                  |  | Downieville B. - Ingalls |           |               | 4.6488166   |
| A                | Hough Mtn<br>Downieville B.<br>Ingalls   |                          | 0.84      | 53 34 40.36   | 9.9943859   |
|                  |  |                          | 0.84      | 24 20 27.31   | 9.6150713   |
|                  |  |                          | 0.84      | 102 4. 52.38  | 9.9902732   |
|                  |  | Hough Mtn - Ingalls      |           |               | 4.3582730   |
|                  |  | " - Downieville B.       |           |               | 4.7334749   |
|                  |  | Ingalls - Lassen         |           |               | 4.9670320   |
| A                | Hough Mtn<br>Ingalls<br>Lassen           |                          | 0.69      | 150 45 48.71  | 0.3112108   |
|                  |  |                          | 0.69      | 22 19 50.97   | 9.5797309   |
|                  |  |                          | 0.69      | 6 54 20.32    | 9.0800296   |
|                  |  | Hough Mtn - Lassen       |           |               | 4.8579737   |
|                  |  | " - Ingalls              |           |               | 4.3582724   |
|                  |  | Wellington - Onjurni     |           |               | 4.3514849   |
| A                | Top. 10.<br>Wellington<br>Onjurni        |                          | 0.11      | 31 46 3.64    | 0.2786212   |
|                  |  |                          | 0.11      | 129 25 9.60   | 9.8879094   |
|                  |  |                          | 0.11      | 18 48 46.76   | 9.5085032   |
|                  |  | Top. 10 - Onjurni        |           |               | 4.5180155   |
| 210              | West of<br>Grizzly Valley                | " - Wellington           |           |               | 4.1386093   |
|                  |  | Onjurni - Ingalls        |           |               | 4.4759025   |
| A                | Topog. 10<br>Onjurni<br>Ingalls          |                          | 0.31      | 61 15 22.19   | 0.0571101   |
|                  |  |                          | 0.31      | 13 46 22.54   | 9.3767130   |
|                  |  |                          | 0.31      | 104 58 15.27  | 9.9850028   |
|                  |  | Topog 10 - Ingalls       |           |               | 3.9097256   |
|                  |  | " - Onjurni              |           |               | 4.5180154   |
|                  |  | Wellington - Ingalls     |           |               | 4.2133436   |
| A                | Topog. 10<br>Wellington<br>Ingalls       |                          | 0.11      | 93 1 26.14    | 0.0006052   |
|                  |  |                          | 0.11      | 29 45 28.76   | 9.6957770   |
|                  |  |                          | 0.11      | 57 13 3.15    | 9.9246605   |
|                  |  | Topog. 10 - Ingalls      |           |               | 3.9097258   |
|                  |  | " - Wellington           |           |               | 4.1386093   |

| No. of Triangle.                           | OBJECTS. | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS.            |
|--|----------|-------------------|-----------|---------------|------------------------|
| <i>Downierville Butte - Haskell</i>        |          |                   |           |               |                        |
| Topog. 11<br>Downierville B.<br>Haskell    |          |                   | 0.30      | 16 20 59.70   | 4.0471601<br>0.5505173 |
|  |          |                   | 0.29      | 52 15 9.17    | 9.8980209              |
|  |          |                   | 0.30      | 111 23 51.13  | 9.9689831              |
| <i>Topog. 11 - Haskell</i>                 |          |                   |           |               |                        |
|  |          |                   |           |               | 4.4956983              |
| <i>" - Downierville</i>                    |          |                   |           |               |                        |
|  |          |                   |           |               | 4.5666605              |
| <i>Haskell - Wellington</i>                |          |                   |           |               |                        |
| Topog. 11<br>Haskell<br>Wellington         |          |                   | 0.36      | 43 22 5.64    | 4.3593354<br>0.1632427 |
|  |          |                   | 0.36      | 26 40 50.05   | 9.6522618              |
|  |          |                   | 0.36      | 109 57 4.31   | 9.9731202              |
| <i>Topog. 11 - Wellington</i>              |          |                   |           |               |                        |
|  |          |                   |           |               | 4.1748399              |
| <i>" - Haskell</i>                         |          |                   |           |               |                        |
|  |          |                   |           |               | 4.4956983              |
| <i>Downierville - Wellington</i>           |          |                   |           |               |                        |
| Topog. 11<br>Downierville B.<br>Wellington |          |                   | 0.51      | 59 43 5.49    | 4.5057626<br>0.0637096 |
|  |          |                   | 0.51      | 23 46 10.17   | 9.6053676              |
|  |          |                   | 0.52      | 96 30 44.34   | 9.9971887              |
| <i>Topog 11 - Wellington</i>               |          |                   |           |               |                        |
|  |          |                   |           |               | 4.1748398              |
| <i>" - Downierville</i>                    |          |                   |           |               |                        |
|  |          |                   |           |               | 4.5666609              |
| <i>Kettle Rock Ingalls</i>                 |          |                   |           |               |                        |
| Topog 13<br>Kettle Rock<br>Ingalls         |          |                   |           | 17 35 22.5    | 4.27147<br>0.51971     |
|  |          |                   |           | 103 04 12.1   | 9.98860                |
|  |          |                   |           | (59 20 25.4)  | 9.93460                |
| <i>Topog 13 - Ingalls</i>                  |          |                   |           |               |                        |
|  |          |                   |           |               | 4.77978                |
| <i>" - Kettle Rock</i>                     |          |                   |           |               |                        |
|  |          |                   |           |               | 4.72578                |
| <i>Ingalls - Wellington</i>                |          |                   |           |               |                        |
| Topog 13<br>Ingalls<br>Wellington          |          |                   |           | 10 42 15.0    | 4.21334<br>0.73110     |
|  |          |                   |           | (126 06 11.9) | 9.90739                |
|  |          |                   |           | 43 11 33.1    | 9.83534                |
| <i>Topog 13 Wellington</i>                 |          |                   |           |               |                        |
|  |          |                   |           |               | 4.85483                |
| <i>" " Ingalls</i>                         |          |                   |           |               |                        |
|  |          |                   |           |               | 4.77978                |

| No. of Triangle. | OBJECTS. | SPHERICAL ANGLES.  | Sph. Exc.        | PLANE ANGLES. | LOGARITHMS. |
|------------------|----------|--------------------|------------------|---------------|-------------|
|                  |          | Lassen - Dyer      |                  |               | 4.68797 -   |
| Topog 19         |          |                    |                  | 120 42 30     | 0.06561 +4  |
| Lassen           |          |                    |                  | 52 40 12      | 9.90045 -   |
| Dyer             |          |                    |                  | (6 37 18)     | 9.06188     |
|                  |          | Topog 19 - Dupere  |                  |               | 4.65404 -   |
| "                |          | Lassens            |                  |               | 3.81546 -   |
|                  |          | Ingalls - Dyer     |                  |               | 4.64326     |
| Topog 19         |          |                    |                  | 4 55 00       | 1.06698     |
| Dyer             |          |                    |                  | 170 02 34     | 9.23783     |
| Ingalls          |          |                    |                  | 5 2 26        | 8.94380     |
|                  |          | Topog 19 - Ingalls |                  |               | 4.94807     |
| "                |          | - Dyer             |                  |               | 4.65404     |
|                  |          | Ingalls - Lassens  |                  |               | 4.967035    |
| Topog 19         |          |                    |                  | 125 37 30     | 0.089991    |
| Lassens          |          |                    |                  | 51 05 17      | 9.89104     |
| Ingalls          |          |                    |                  | 3 17 13       | 8.758432    |
|                  |          | Topog 19 - Ingalls |                  |               | 4.94807     |
| "                |          | - Lassens          |                  |               | 3.81546 -   |
|                  |          | Thompson - Ingalls |                  |               | 4.48034     |
| Topog 20a        |          |                    | <i>Estimated</i> | 42 10 39.1    | 0.17300.    |
| Ingalls          |          |                    | 0.9              | 80 31 51.5    | 9.99404     |
| Thompson         |          |                    | 0.9              | 57 17 29.4    | 9.92501.    |
| Topog 20a        |          | - Thompson         |                  |               | 4.64738.    |
| "                |          | - Ingalls          |                  |               | 4.57836     |
|                  |          | Dyer - Thompson    |                  |               | 4.60754.    |
| Topog 20a        |          |                    | <i>Estimated</i> | 64 52 34.5    | 0.04316.    |
| Thompson         |          |                    | 0.5              | 18 2 20.5     | 9.49088.    |
| Dyer             |          |                    | 0.5              | 97 5 05.0     | 9.99667     |
| Topog 20a        |          | - Dyer             |                  |               | 4.14159.    |
| "                |          | - Thompson         |                  |               | 4.64738     |
|                  |          | Dyer - Ingalls     |                  |               | 4.64326     |
| Topog 20a        |          |                    | <i>Estimated</i> | 107 3 14.6    | 0.01953     |
| Ingalls          |          |                    | 0.4              | 17 31 40.5    | 9.47881     |
| Dyer             |          |                    | 0.4              | 55 25 49      | 9.91556.    |
| Topog 20a        |          | - Dyer             |                  |               | 4.14160     |
| "                |          | - Ingalls          |                  |               | 4.57835.    |

| No. of Triangle. | OBJECTS.   | SPHERICAL ANGLES.   | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|------------|---------------------|-----------|---------------|-------------|
|                  |            | Butt - Lassen       |           |               |             |
|                  | Prattville |                     |           | 44 09 00      | 4.50099     |
|                  | Butt       |                     |           | 109 37 43     | 0.15705     |
|                  | Lassen     |                     |           | 26 13 17      | 9.97400     |
|                  |            |                     |           |               | 9.64526     |
|                  |            | Prattville - Lassen |           |               | 4.63204     |
|                  |            | " - Butt            |           |               | 4.30331     |
|                  |            | Dyer - Lassen       |           |               | 4.68797     |
|                  | Prattville |                     |           | 118 58 00     | 0.05804     |
|                  | Lassen     |                     |           | 10 45 5       | 9.27080     |
|                  | Dyer       |                     |           | 50 16 55      | 9.88604     |
|                  |            | Prattville - Dyer   |           |               | 4.01681     |
|                  |            | " - Lassen          |           |               | 4.63205     |
|                  |            | Butt - Dyer         |           |               | 4.85005     |
|                  | Prattville |                     |           | 163 07        | 0.50696     |
|                  | Butt       |                     |           | 5 44 9        | 8.99975     |
|                  | Dyer       |                     |           | 11 8 51       | 9.28631     |
|                  |            | Prattville - Dyer   |           |               | 4.01677     |
|                  |            | " - Butt            |           |               | 4.30332     |
|                  |            | Butt - Lassen       |           |               | 4.50099     |
|                  | Lopog 14   |                     |           | 10 57 02      | 0.92135     |
|                  | Lassen     |                     |           | 6 17 7        | 9.03933     |
|                  | Butt       |                     |           | 162 45 51     | 9.47174     |
|                  |            | Butt to Lopog 14    |           |               | 4.26767     |
|                  |            | Lopog 14 to Lassen  |           |               | 4.69408     |
|                  |            | Butt - Dyer         |           |               | 4.48005     |
|                  | Lopog 14   |                     |           | 56 24 21      | 0.07937     |
|                  | Butt       |                     |           | 93 20 34      | 9.99926     |
|                  | Dyer       |                     |           | 30 15 5       | 9.70225     |
|                  |            | Lopog 14 to Dyer    |           |               | 4.55868     |
|                  |            | " " to Butt         |           |               | 4.26167     |
|                  |            | Dyer - Lassen       |           |               | 4.68797     |
|                  | Lopog 14   |                     |           | 67 21 23      | 0.03484     |
|                  | Lassen     |                     |           | 43 15 28      | 9.83587     |
|                  | Dyer       |                     |           | 69 23 9       | 9.97126     |
|                  |            | Lopog 14 to Dyer    |           |               | 4.55868     |
|                  |            | " " to Lassen       |           |               | 4.69407     |



| No. of Triangle.                            | OBJECTS.          | SPHERICAL ANGLES.    | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|---|-------------------|----------------------|-----------|---------------|-------------|
| Rejected<br>Topog. 36<br>Harkness<br>Lassen | Lassen - Harkness |                      |           |               | 4.2626499   |
|   |                   |                      | .44       | 34 54 56.66   | 0.2423223   |
|   |                   |                      | .44       | 65 56 37.06   | 9.9605584.  |
|   |                   |                      | .45       | 79 8 6.28     | 9.9927443   |
|   |                   | Topog. 36 - Lassen   |           |               | 4.4655306.  |
|   | " - Harkness      |                      |           | 4.4971165     |             |
| Rejected<br>Topog. 36<br>Butt<br>Harkness   | Butt - Harkness   |                      |           |               | 4.3947054.  |
|   |                   |                      | .30       | 50 36 15.10   | 0.1119441   |
|   |                   |                      | .31       | 101 57 39.93  | 9.9904669.  |
|   |                   |                      | .30       | 27 26 4.97    | 9.6634537   |
|   |                   | Topog. 36 - Harkness |           |               | 4.4971165   |
|   | " - Butt Mtn      |                      |           | 4.1701032.    |             |
| Rejected<br>Topog. 36<br>Butt<br>Lassen     | Butt - Lassen     |                      |           |               | 4.5009944   |
|   |                   |                      | .37       | 85 31 12.13   | 0.0013289.  |
|   |                   |                      | .36       | 66 44 49.47   | 9.9632073   |
|   |                   |                      | .36       | 27 43 58.40   | 9.6677799   |
|   |                   | Topog. 36 - Lassen   |           |               | 4.4655306.  |
|   | " - Butt Mtn      |                      |           | 4.1701032.    |             |
| Harkness probably mis-sighted from 36.      |                   |                      |           |               |             |
| 240<br>Topog 35<br>Lassen                   | Lassen - 35       |                      |           |               | 3.81657     |
|   |                   |                      |           | 2 16 00       | 1.40285     |
|   |                   |                      |           | 161 20 33.4   | 9.50503     |
|   |                   |                      |           | 16 23 26.6    | 9.45054     |
|   |                   | Topog 40 - Lassen    |           |               | 4.72445     |
|   | " " Topog 35      |                      |           | 4.66996       |             |
| 240<br>Lassen<br>Butt                       | Lassen - Butt     |                      |           |               | 4.50099.    |
|   |                   |                      |           | 36 24 00      | 0.22664     |
|   |                   |                      |           | 46 39 43.4    | 9.86172.    |
|   |                   |                      |           | 96 56 16.6    | 9.99681     |
|   |                   | Topog 40 - Butt      |           |               | 4.58936     |
|   | " - Lassen        |                      |           | 4.72444       |             |
| Topog 40<br>Topog 35<br>Butt                | Butt - Topog 35   |                      |           |               | 4.467064    |
|   |                   |                      |           | 38 40 00      | 0.20427     |
|   |                   |                      |           | 55 53 38      | 9.91803     |
|   |                   |                      |           | 85 26 22      | 9.99862     |
|   |                   | Topog 40 - Butt      |           |               | 4.58936     |
|   | " - Topog 35      |                      |           | 4.66995       |             |

Rejected  
see  
page 16



| No. of Triangle.    | OBJECTS.              | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES.  | LOGARITHMS. |
|---------------------|-----------------------|-------------------|-----------|----------------|-------------|
|                     | Lassen to $\Delta 35$ |                   |           |                | 3.81658     |
| Topog 34            |                       |                   |           | 5 55 00        | 0.98682     |
| Topog 35            |                       |                   |           | 160 09 28.8    | 9.53085     |
| Lassen              |                       |                   |           | 13 55 31.2     | 9.38140     |
| Topog 34 - Lassen   |                       |                   |           |                | 4.33415     |
| " - Topog 35        |                       |                   |           |                | 4.18480     |
|                     | Lassen - Butt         |                   |           |                | 4.50099     |
| Topog 34            |                       |                   |           | 87 59 00       | 0.00027     |
| Lassen              |                       |                   |           | 49 07 38.8     | 9.87862     |
| Butt                |                       |                   |           | 42 53 21.2     | 9.83288     |
| Topog 34 - Butt     |                       |                   |           |                | 4.33415     |
| " - Lassen          |                       |                   |           |                | 4.37988     |
|                     | Butt - Topog 35       |                   |           |                | 4.46706     |
| Topog 34            |                       |                   |           | 93 54 00       | 0.001007    |
| Topog 35            |                       |                   |           | 54 42 35       | 9.91182     |
| Butt                |                       |                   |           | 31 23 25       | 9.76672     |
| Topog 34 - Butt     |                       |                   |           |                | 4.37988     |
| " - Topog 35        |                       |                   |           |                | 4.18479     |
|                     | Topog 35 - Lassen     |                   |           |                | 3.81658     |
| Topog. 36           |                       |                   |           | 6° 10' 45"     | 0.96803     |
| Lassen              |                       |                   |           | 16 41 39       | 9.45828     |
| Topog. 35           |                       |                   |           | 157 7 36       | 9.58960     |
| Topog 36 - Topog 35 |                       |                   |           |                | 4.24289     |
| " - Lassen          |                       |                   |           |                | 4.37421     |
|                     | Lassen - Butt         |                   |           |                | 4.50099     |
| Topog 36            |                       |                   |           | .46 85 31 12.5 | 0.00133     |
| Butt                |                       |                   |           | .46 48 7 15.5  | 9.87790     |
| Lassen              |                       |                   |           | .46 46 21 32   | 9.85954     |
| Topog 36 - Lassen   |                       |                   |           |                | 4.37422     |
| Topog 36 - Butt     |                       |                   |           |                | 4.36187     |
|                     | Topog 35 - Butt       |                   |           |                | 4.46706     |
| Topog. 36           |                       |                   |           | 91 41 57.5     | 0.00019     |
| Butt                |                       |                   |           | 36 37 20.5     | 9.77563     |
| Topog. 35           |                       |                   |           | 51 40 42       | 9.89461     |
| Topog 36 - Topog 35 |                       |                   |           |                | 4.24288     |
| Topog 36 - Butt     |                       |                   |           |                | 4.36187     |

| No. of Triangle. | OBJECTS.    | SPHERICAL ANGLES.  | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|-------------|--------------------|-----------|---------------|-------------|
|                  |             | Topog. 35 - Lassen |           |               |             |
|                  | Topog 31    |                    |           | 6 39 56       | 3.81658     |
|                  | Lassen      |                    |           | 41 45 52      | 0.93526     |
|                  | 35 (topog.) |                    |           | 131 34 12     | 9.82352     |
|                  |             |                    |           |               | 9.87398.    |
|                  |             |                    |           |               | 4.57536     |
|                  |             |                    |           |               | 4.62782.    |
|                  |             | Lassen             |           |               |             |
|                  |             |                    |           |               | 4.24289     |
|                  | Topog. 31   |                    |           | 27 22 23      | 0.33745.    |
|                  | Topog 35    |                    |           | 71 18 22      | 9.97645.    |
|                  | Topog. 36   |                    |           | 81 19 25      | 9.99500     |
|                  |             |                    |           |               | 4.55680.    |
|                  |             |                    |           |               | 4.57534.    |
|                  |             |                    |           |               | 4.37421.    |
|                  | Topog 31    |                    |           | 34 02 19      | 9.25201     |
|                  | Lassen      |                    |           | 58 27 31      | 9.93057.    |
|                  | Topog. 36   |                    |           | 87 30 10      | 9.99958.    |
|                  |             |                    |           |               | 4.55680     |
|                  |             |                    |           |               | 4.62581     |
|                  |             |                    |           |               | 4.50099     |
|                  |             |                    |           |               | 0.172325    |
|                  | Camp 35 ♂   |                    |           | 42 15 30      | 9.98777     |
|                  | Butt        |                    |           | 103 31 52     | 9.74992-    |
|                  | Lassen      |                    |           | 34 12 38      |             |
|                  |             |                    |           |               | 4.66109     |
|                  |             |                    |           |               | 4.42323     |
|                  |             |                    |           |               | 4.68797     |
|                  |             |                    |           |               | 0.19814     |
|                  | Camp 35 ♂   |                    |           | 140 40 45     | 8.68297     |
|                  | Lassen      |                    |           | 2 45 44       | 9.77499     |
|                  | Dyer        |                    |           | 36 33 31      |             |
|                  |             |                    |           |               | 3.56908     |
|                  |             |                    |           |               | 4.66110     |
|                  |             |                    |           |               | 4.48005     |
|                  |             |                    |           |               | 1.29933     |
|                  | Camp 35     |                    |           | 177 03 45     | 7.80052     |
|                  | Butt        |                    |           | 0 21 43       | 8.65260     |
|                  | Dyer        |                    |           | 2 34 32       |             |
|                  |             |                    |           |               | 3.57090     |
|                  |             |                    |           |               | 4.42298     |

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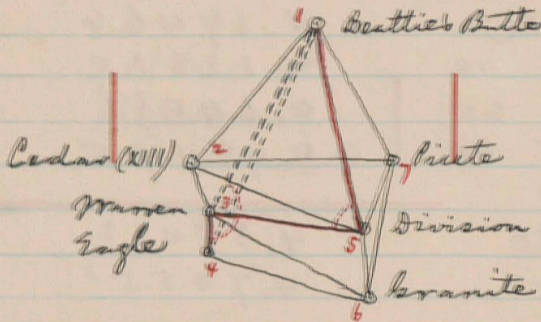
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| No. of Triangle. | OBJECTS. | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|----------|-------------------|-----------|---------------|-------------|
|                  |          | Cedar to Warren   |           |               | 4.41563     |
|                  | Sta A    |                   |           | 15 09 00      | 0.58278     |
|                  | Warren   |                   |           | 22 06 08      | 9.57549     |
|                  | Cedar    |                   |           | 142 44 52     | 9.78199     |
|                  |          | Sta A - Cedar     |           |               | 4.57390     |
|                  |          | " - Warren        |           |               | 4.78040     |
|                  |          | Cedar to Bidwell  |           |               | 4.59466     |
|                  | Sta A    |                   |           | 97 57 00      | 0.00419 -   |
|                  | Cedar    |                   |           | 11 17 12      | 9.29163     |
|                  | Bidwell  |                   |           | 70 45 48      | 9.97505     |
|                  |          | Sta A - Bidwell   |           |               | 3.89048     |
|                  |          | " - Cedar         |           |               | 4.57390     |
|                  |          | Warren to Bidwell |           |               | 4.80457     |
|                  | Sta A    |                   |           | 113 06 00     | 0.03620     |
|                  | Warren   |                   |           | 6 26 12       | 9.04962     |
|                  | Bidwell  |                   |           | 60 27 48      | 9.93954     |
|                  |          | Sta A - Bidwell   |           |               | 3.89049     |
|                  |          | " - Warren        |           |               | 4.78041     |
|                  |          | Cedar - Warren    |           |               | 4.41563     |
|                  | Sta B    |                   |           | 19 42 00      | 0.47225     |
|                  | Warren   |                   |           | 37 31 38      | 9.78472     |
|                  | Cedar    |                   |           | 122 46 22     | 9.92471     |
|                  |          | Sta B - Cedar     |           |               | 4.67260     |
|                  |          | " - Warren        |           |               | 4.81259     |
|                  |          | Cedar - Bidwell   |           |               | 4.59466     |
|                  | Sta B    |                   |           | 56 38 00      | 0.07823 -   |
|                  | Cedar    |                   |           | 31 15 42      | 9.71512     |
|                  | Bidwell  |                   |           | 92 06 18      | 9.99971     |
|                  |          | Sta - Bidwell     |           |               | 4.38801     |
|                  |          | " B - Cedar       |           |               | 4.67260     |
|                  |          | Warren - Bidwell  |           |               | 4.80457     |
|                  | Sta B    |                   |           | 76 20 00      | 0.01247     |
|                  | Warren   |                   |           | 21 51 42      | 9.57097     |
|                  | Bidwell  |                   |           | 81 48 18      | 9.99554     |
|                  |          | Sta B - Bidwell   |           |               | 4.38801     |
|                  |          | " - Warren        |           |               | 4.81258     |

| No. of Triangle. | OBJECTS.         | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES.          | LOGARITHMS. |
|------------------|------------------|-------------------|-----------|------------------------|-------------|
|                  | Cedar - Warren   |                   |           |                        |             |
| Sta C            |                  | 17 13 00          |           | 75 09 00               | 4.41563     |
| Warren           |                  | 35 14 16          | ←         | <del>22 44 06</del> 08 | 0.52873     |
| Cedar            |                  | 127 32 44         |           | 142 44 52              | 9.76115     |
|                  |                  |                   |           |                        | 9.89920     |
|                  | Sta C - Cedar    |                   |           |                        | 4.70551     |
|                  | " - Warren       |                   |           |                        | 4.84356     |
|                  | Cedar - Bidwell  |                   |           |                        |             |
| Sta C            |                  |                   |           | 48 25 00               | 4.59466     |
| Cedar            |                  |                   |           | 26 29 20               | 0.12610     |
| Bidwell          |                  |                   |           | 105 05 40              | 9.64936     |
|                  |                  |                   |           |                        | 9.98475     |
|                  | Sta C - Bidwell  |                   |           |                        | 4.37012     |
|                  | " - Cedar        |                   |           |                        | 4.70551     |
|                  | Warren - Bidwell |                   |           |                        |             |
| Sta C            |                  |                   |           | 65 38 00               | 4.80457     |
| Warren           |                  |                   |           | 19 34 20               | 0.04052     |
| Bidwell          |                  |                   |           | 94 47 40               | 9.52504     |
|                  |                  |                   |           |                        | 9.99848     |
|                  | Sta C - Bidwell  |                   |           |                        | 4.37013     |
|                  | " - Warren       |                   |           |                        | 4.84357     |

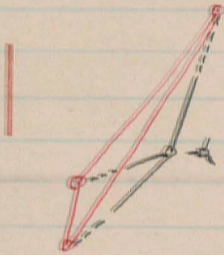
| No. of Triangle.     | OBJECTS.          | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|----------------------|-------------------|-------------------|-----------|---------------|-------------|
| $\Delta$             | Warren - Division |                   |           |               | 4.9352425   |
| M. Peak<br>July 7/79 | Beattie's Butte   | 36 0 37.00        | 9.55      | 36 0 27.45    | 0.2307018   |
|                      | Warren Peak       | 77 51 22.53       | 9.55      | 77 51 12.98   | 9.9901670   |
|                      | Division PK       | 66 8 29.12        | 9.55      | 66 8 19.57    | 9.9611970   |

|                            |           |
|----------------------------|-----------|
| Beattie's Butte - Division | 5.1561113 |
| " " Warren                 | 5.1271413 |



|          |                          |              |      |              |           |
|----------|--------------------------|--------------|------|--------------|-----------|
| $\Delta$ | Beattie's Butte - Warren |              |      |              | 5.1271413 |
| "        | Eagle Peak               | 38 45 48.34  | 0.84 | 38 45 47.53  | 0.2033541 |
|          | Beattie's Butte          | 2 51 47.61   | 0.80 | 2 51 46.81   | 8.6985184 |
|          | Warren Peak              | 138 22 26.46 | 0.80 | 138 22 25.66 | 9.8223435 |

|                   |           |
|-------------------|-----------|
| Eagle - Warren    | 4.0290138 |
| " Beattie's Butte | 5.1528389 |



|                       |                |  |  |            |         |
|-----------------------|----------------|--|--|------------|---------|
| $\Delta$              | Warren - Eagle |  |  |            | 4.02901 |
| 1/2 Sta. Kahler, 1878 | Warren Peak    |  |  | 6 58 0     | 0.91617 |
|                       | Eagle PK       |  |  | (119 7 42) | 9.94128 |
|                       |                |  |  | 53 54 18   | 9.90743 |

|                  |         |
|------------------|---------|
| 1/2 Sta. - Eagle | 4.88646 |
| " Warren         | 4.85261 |

|                 |                          |  |  |            |         |
|-----------------|--------------------------|--|--|------------|---------|
| $\Delta$ Sta. " | Beattie's Butte - Warren |  |  |            | 5.12714 |
| Beattie's Butte |                          |  |  | 141 23     | 0.20474 |
|                 |                          |  |  | 19 22 17   | 9.52073 |
|                 | Warren                   |  |  | (19 14 43) | 9.51800 |

|                   |         |
|-------------------|---------|
| 1/2 Sta. - Warren | 4.85261 |
| " Beattie's Butte | 4.84988 |

|                 |                         |  |  |          |         |
|-----------------|-------------------------|--|--|----------|---------|
| $\Delta$ Sta. " | Beattie's Butte - Eagle |  |  |          | 5.15284 |
| Beattie's Butte |                         |  |  | 148 21   | 0.28007 |
|                 |                         |  |  | 16 30 30 | 9.45356 |
|                 | Eagle PK                |  |  | 15 8 30  | 9.41698 |

|                   |         |
|-------------------|---------|
| 1/2 Sta. - Eagle  | 4.88647 |
| " Beattie's Butte | 4.84989 |

Cover  
p. 32 p. 9

| No. of Triangle.                       | OBJECTS.  | SPHERICAL ANGLES.                         | Sph. Exc. | PLANE ANGLES.   | LOGARITHMS.                         |
|--|---|---|-----------|---|-------------------------------------|
|  |   | <del>Klikatat - Hood</del>                |           |   |                                     |
|  | <del>&amp; Sta. 1, Karl 78<br/>Klikatat Hill<br/>Mount Hood</del> |   |           | <del>46° 20'<br/>(<del>6</del> 14 15)<br/>167 25 45</del> | <del>4.7368101</del>                |
|  | <del>Karl's &amp; Station 1 - Hood<br/>" Klikatat</del>           |   |           |   |                                     |
|  |   | <del>Dalles - Klikatat</del>              |           |   |                                     |
|  | <del>Sta. 1<br/>Dalles Hill<br/>Klikatat Hill</del>               |   |           | <del>32 7<br/>41 9 10</del>                               | <del>4.1225372</del>                |
|  |   | <del>Sta. 1 - Klikatat<br/>" Dalles</del> |           |   |                                     |
|  |   | <del>Dalles - Hood</del>                  |           |   |                                     |
|  | <del>Sta. 1<br/>Dalles Hill<br/>Mt. Hood</del>                    |   |           | <del>78 27</del>  | <del>4.7179224</del>                |
|  |   | <del>Sta. 1 - Hood<br/>" Dalles</del>     |           |   |                                     |
| <i>The given observed angles wrong</i> |   |   |           |   |                                     |
| * Dist. Book 17 page 28 triangle 4     |   |   |           |   |                                     |
|  |   | North Base - Hood                         |           |   | (a) 4.6688317*                      |
|  | Brewery<br>North Base<br>Mt. Hood                                 |   |           | (p) 99 25 0<br>(76 19 40)<br>(x) 4 15 20                  | 0.0058921<br>9.9875160<br>8.8704343 |
|  |   | Brewery - Hood                            |           |   | 4.6622398                           |
|  |   | " North Base                              |           |   | 3.5451581                           |
|  |   | Klikatat - N. Base                        |           |   | (b) 3.9391854*                      |
|  | Brewery<br>Klikatat<br>North Base                                 |   |           | (p) 35 54 0<br>(y) 13 41 15<br>(130 24 45)                | 0.2318265<br>9.3740628<br>9.8816111 |
|  |   | (Dalles) Brewery - N. Base                |           |   | 3.5450747                           |
|  |   | " Klikatat                                |           |   | 4.0526230                           |
|  |   | Klikatat - Hood                           |           |   | (c) 4.7368102*                      |
|  | Brewery<br>Klikatat<br>Hood                                       |   |           | (P+Q) 135 19 0<br>(A+y) 36 18 55<br>(B+x) 8 22 5          | 0.1529286<br>9.7724890<br>9.1629568 |
|  |   | Brewery - Hood                            |           |   | 4.6622278                           |
|  |   | " Klikatat                                |           |   | 4.0526956                           |

| No. of Triangle.                 | OBJECTS.                                     | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS.   |
|----------------------------------|--|-------------------|-----------|---------------|---------------|
| d<br>Covt B. 32 p. 13<br>Covt B. | Dist. B. 17 p. 28 Tri. 5<br>Hood - Jefferson |                   |           |               | (a) 4.8929292 |
|                                  | Oak Grove Sta                                |                   | P         | 74 29 0       | 0.01612       |
|                                  | Hood   |                   |           | (66 53 30)    | 9.96368       |
|                                  | Jefferson                                    |                   | X         | 38 37 30      | 9.79584       |
|                                  | Oak Grove - Mt. Jefferson                    |                   |           |               | 4.87272       |
|                                  | " Mt. Hood                                   |                   |           |               | 4.70438       |
|                                  | Tygh Hill - Hood                             |                   |           |               | (b) 4.6845518 |
|                                  | Oak Grove                                    |                   | P'        | 72 41 0       | 0.02015       |
|                                  | Tygh Hill                                    |                   | Q         | 87 50 20      | 9.99969       |
|                                  | Mt. Hood                                     |                   |           | (19 28 40)    | 9.52302       |
| Oak Grove - Hood                 |  |                   |           | 4.70439       |               |
| " Tygh                           |  |                   |           | 4.22772       |               |
| Tygh - Jefferson                 |  |                   |           | (c) 4.9506749 |               |
| Oak Grove                        |  | (P+Q)             | 147 10 0  | 0.26584       |               |
| Tygh Hill                        |  | (Y-A)             | 26 56 35  | 9.65619       |               |
| Mt. Jefferson                    |  | (X-B)             | 5 53 25   | 9.01124       |               |
| Oak Grove - Jefferson            |  |                   |           | 4.87270       |               |
| " Tygh                           |  |                   |           | 4.22775       |               |
| Karl's 10                        | Dist B. 17 p. 28 Tri. 5<br>Hood - Jefferson  |                   |           |               | (a) 4.8929292 |
|                                  | Station 10                                   |                   | P         | 71 06 00      | 0.02407       |
|                                  | Jefferson                                    |                   | X         | 33 22 55      | 9.74053       |
|                                  | Hood   |                   |           | 73 31 05      | 9.98597       |
|                                  | Sta. 10 - Hood                               |                   |           |               | 4.65752       |
|                                  | Sta 10 - Jefferson                           |                   |           |               | 4.90296       |
|                                  | Tygh Hill - Hood                             |                   |           |               | (b) 4.6845518 |
|                                  | Station 10                                   |                   | O'        | 102 42 00     | 0.01076       |
|                                  | Hood   |                   |           | 10 51 05      | 9.27475       |
|                                  | Tygh Hill                                    |                   | Y         | 66 26 55      | 9.96223       |
| Sta 10 - Tygh Hill               |  |                   |           | 3.97006       |               |
| Sta 10 - Hood                    |  |                   |           | 4.65754       |               |
| Tygh Hill - Jefferson            |  |                   |           | (c) 4.9506749 |               |
| Station 10                       |  | P+Q'              | 173 48 00 | 0.96658       |               |
| Jefferson                        |  | X-B               | 0 38 50   | 8.05292       |               |
| Tygh Hill                        |  | Y-A               | 5 33 10   | 8.98571       |               |
| 10 - Tygh Hill                   |  |                   |           | 3.97017       |               |
| 10 - Jefferson                   |  |                   |           | 4.90296       |               |
| Karl's 15                        | Dist B. 17 p. 27 A 1<br>Hood - Jefferson     |                   |           |               | (a) 4.8929293 |
|                                  | Station 15                                   |                   | P         | 74 36 00      | 0.01588       |
|                                  | Jefferson                                    |                   | X         | 51 42 30      | 9.89480       |
|                                  | Hood   |                   |           | 53 41 30      | 9.90625       |
|                                  | 85' to Hood                                  |                   |           |               | 4.80361       |
| 15 - Jefferson                   |  |                   |           | 4.81506       |               |

| No. of Triangle. | OBJECTS.    | SPHERICAL ANGLES.     | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|-------------|-----------------------|-----------|---------------|-------------|
|                  |             | Hood - Celilo         |           | (b)           | 4.8448754   |
|                  | Station 15' |                       | P         | 57 54 00      | 0.07205     |
|                  | Hood        |                       |           | 71 43 00      | 9.97758     |
|                  | Celilo      |                       | γ         | 50 23 00      | 9.88668     |
|                  |             |                       |           |               | 4.89442     |
|                  |             |                       |           |               | 4.80360     |
|                  |             | Jefferson - Celilo    |           | (c)           | 5.1195033   |
|                  | Station 15' |                       | P+P'      | 132 - 30 00   | 0.13237     |
|                  | Jefferson   |                       | γ-B       | 26 02 45      | 9.64255     |
|                  | Celilo      |                       | γ-A       | 21 27 15      | 9.56318     |
|                  |             |                       |           |               | 4.89442     |
|                  |             |                       |           |               | 4.81505     |
|                  |             | Hood - Jefferson      |           | (a)           | 4.8929292   |
| 14 &             | Station 14  |                       | P         | 74 48 00      | 0.01547     |
|                  | Jefferson   |                       |           | 37 59 20      | 9.78923     |
|                  | Hood        |                       |           | 67 12 40      | 9.96470     |
|                  |             |                       |           |               | 4.69762     |
|                  |             |                       |           |               | 4.87309     |
|                  |             | Hood - Tygh Hill      |           | (b)           | 4.6848518   |
|                  | Station 14  |                       | P'        | 86 52 00      | 0.00065     |
|                  | Hood        |                       |           | 99 09 30      | 9.51611     |
|                  | Tygh Hill   |                       | γ         | 73 58 30      | 9.98272     |
|                  |             |                       |           |               | 4.20131     |
|                  |             |                       |           |               | 4.66799     |
|                  |             | Jefferson - Tygh Hill |           | (c)           | 4.9508749   |
|                  | Station 14  |                       | P+P'      | 161 40 00     | 0.50232     |
|                  | Jefferson   |                       | γ-B       | 5 15 15       | 8.96176     |
|                  | Tygh Hill   |                       | γ-A       | 13 04 45      | 9.35467     |
|                  |             |                       |           |               | 4.41475     |
|                  |             |                       |           |               | 4.80766     |
|                  |             | Hood - Dalles         |           | (a)           | 4.7179225   |
| 20               | Station 20  |                       | P         | 98 19 00      | 0.00459     |
|                  | Hood        |                       | γ         | 9 22 10       | 9.21165     |
|                  | Dalles      |                       |           | 72 18 50      | 9.97897     |
|                  |             |                       |           |               | 3.93416     |
|                  |             |                       |           |               | 4.70148     |
|                  |             | Dalles - Celilo       |           | (b)           | 4.2522092   |
|                  | Station 20  |                       | P'        | 44 22 00      | 0.15537     |
|                  | Dalles      |                       |           | 118 59 20     | 9.95370     |
|                  | Celilo      |                       | γ         | 19 38 48      | 9.52657     |
|                  |             |                       |           |               | 4.36127     |
|                  |             |                       |           |               | 3.93415     |

Dist B 17 h 28 Δ 5

Dist B 17 h 25 Δ 2

See page 2 &



| No. of Triangle.              | OBJECTS.   | SPHERICAL ANGLES. | Sph. Exc.       | PLANE ANGLES. | LOGARITHMS. |
|-------------------------------|------------|-------------------|-----------------|---------------|-------------|
|                               |            | Houl - belilo     |                 | (c)           | 4.8448752   |
|                               | Station 20 |                   | $P+P'$          | 142 41 00     | 0.21737     |
|                               | Houl       |                   | $\alpha+\beta$  | 11 29 00      | 9.29903     |
|                               | belilo     |                   | $\gamma+\delta$ | 25 50 00      | 9.63924     |
|                               |            | 20 - belilo       |                 |               | 4.36127     |
|                               |            | 20 - Houl         |                 |               | 4.70148     |
|                               |            | Houl - Jefferson  |                 | (a)           | 4.8929293   |
| Kahless & Tygh Hills West End | Station 8  |                   | $P$             | 70 44 00      | 0.02503     |
|                               | Jefferson  |                   | $\alpha$        | 27 37 50      | 9.66630     |
|                               | Houl       |                   |                 | 81 38 10      | 9.99536     |
|                               |            | 8 - Houl          |                 |               | 4.58426     |
|                               |            | 8 - Jefferson     |                 |               | 4.91331     |
|                               |            | Houl - Adams      |                 | (b)           | 4.9709313   |
|                               | Station 8  |                   | $P'$            | 68 22 00      | 0.04871     |
|                               | Houl       |                   |                 | 95 06 20      | 9.99827     |
|                               | Adams      |                   | $\gamma$        | 21 31 40      | 9.56461     |
|                               |            | 8 - Adams         |                 |               | 5.01793     |
|                               |            | 8 - Houl          |                 |               | 4.58427     |
|                               |            | Jefferson - Adams |                 | (c)           | 5.2345459   |
|                               | Station 8  |                   | $P+P'$          | 134 06 00     | 0.14380     |
|                               | Jefferson  |                   | $\alpha-\beta$  | 25 51 20      | 9.63959     |
|                               | Adams      |                   | $\gamma-\delta$ | 20 02 40      | 9.53498     |
|                               |            | 8 - Adams         |                 |               | 5.01793     |
|                               |            | 8 - Jefferson     |                 |               | 4.91332     |
|                               |            | Jefferson - Houl  |                 | (a)           | 4.8929293   |
| Kahless & Tygh Hills          | Station 23 |                   | $P$             | 58 51 00      | 0.06761     |
|                               | Jefferson  |                   | $\alpha$        | 33 41 30      | 9.74408     |
|                               | Houl       |                   |                 | 87 27 30      | 9.99957     |
|                               |            | 23 - Houl         |                 |               | 4.70462     |
|                               |            | 23 - Jefferson    |                 |               | 4.96011     |
|                               |            | Houl - Adams      |                 | (b)           | 4.9709513   |
|                               | Station 23 |                   | $P'$            | 62 07 00      | 0.05360     |
|                               | Houl       |                   |                 | 89 17 00      | 9.99998     |
|                               | Adams      |                   | $\gamma$        | 28 36 00      | 9.68006     |
|                               |            | 23 - Adams        |                 |               | 5.02452     |
|                               |            | 23 - Houl         |                 |               | 4.70461     |
|                               |            | Jefferson - Adams |                 | (c)           | 5.2345459   |
|                               | Station 23 |                   | $P+P'$          | 120 58 00     | 0.06678     |
|                               | Jefferson  |                   | $\alpha-\beta$  | 31 55 00      | 9.72320     |
|                               | Adams      |                   | $\gamma-\delta$ | 27 07 00      | 9.65888     |
|                               |            | 23 - Adams        |                 |               | 5.02452     |
|                               |            | 23 - Jefferson    |                 |               | 4.96010     |

| No. of Triangle.                     | OBJECTS.                        | SPHERICAL ANGLES. | Sph. Exc.        | PLANE ANGLES. | LOGARITHMS.   |
|--------------------------------------|---------------------------------|-------------------|------------------|---------------|---------------|
| Kahlen I & Hazelath or military road | Station 1<br>Jefferson<br>Hood  | Hood - Jefferson  |                  |               | (a) 4.8929293 |
|                                      |                                 |                   | $\rho$           | 49 39 00      | 0.11799       |
|                                      |                                 |                   | $\gamma$         | 44 11 10      | 9.84322       |
|                                      |                                 |                   |                  | 86 09 50      | 9.99903       |
|                                      |                                 |                   |                  | 1 - Hood      | 4.85413       |
|                                      |                                 |                   |                  | 1 - Jefferson | 5.00995       |
|                                      | Station 1<br>Hood<br>Adams      | Hood - Adams      |                  |               | (b) 4.9709513 |
|                                      |                                 |                   | $\rho'$          | 52 15 00      | 0.10199       |
|                                      |                                 |                   |                  | 90 34 40      | 9.99998       |
|                                      |                                 |                   |                  | 37 10 20      | 9.78119       |
|                                      |                                 |                   |                  | 1 - Adams     | 5.07292       |
|                                      |                                 |                   |                  | 1 - Hood      | 4.85413       |
|                                      | Station 1<br>Jefferson<br>Adams | Jefferson - Adams |                  |               | (c) 5.2345459 |
|                                      |                                 |                   | $\rho + \rho'$   | 101 34 00     | 0.00944       |
|                                      |                                 |                   | $\gamma - \beta$ | 42 24 40      | 9.82595       |
|                                      |                                 |                   |                  | 35 41 20      | 9.76595       |
|                                      |                                 |                   |                  | 1 - Adams     | 5.07293       |
|                                      |                                 |                   |                  | 1 - Jefferson | 5.00993       |
| Kahlen 4 &                           | Station 4<br>Jefferson<br>Hood  | Hood - Jefferson  |                  |               | (a) 4.8929293 |
|                                      |                                 |                   | $\rho$           | 51 9 00       | 0.10858       |
|                                      |                                 |                   | $\gamma$         | 63 37 10      | 9.95224       |
|                                      |                                 |                   |                  | 65 13 50      | 9.95808       |
|                                      |                                 |                   |                  | 4 - Hood      | 4.95376       |
|                                      |                                 |                   |                  | 4 - Jefferson | 4.95959       |
|                                      | Station 4<br>Hood<br>Adams      | Hood - Adams      |                  |               | (b) 4.9709513 |
|                                      |                                 |                   | $\rho'$          | 35 01 00      | 0.24123       |
|                                      |                                 |                   |                  | 112 30 40     | 9.96864       |
|                                      |                                 |                   |                  | 33 28 20      | 9.74157       |
|                                      |                                 |                   |                  | 4 - Adams     | 5.18082       |
|                                      |                                 |                   |                  | 4 - Hood      | 4.95375       |
|                                      | Station 4<br>Jefferson<br>Adams | Jefferson - Adams |                  |               | (c) 5.2345459 |
|                                      |                                 |                   | $\rho + \rho'$   | 86 10 00      | 0.00098       |
|                                      |                                 |                   | $\gamma - \beta$ | 61 50 40      | 9.94531       |
|                                      |                                 |                   |                  | 31 59 20      | 9.72407       |
|                                      |                                 |                   |                  | 4 - Adams     | 5.18083       |
|                                      |                                 |                   |                  | 4 - Jefferson | 4.95959       |

| No. of Triangle.                 | OBJECTS.                    | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|----------------------------------|-----------------------------|-------------------|-----------|---------------|-------------|
| Kerls 14 8                       | Sta 14<br>Hood<br>Jefferson | Hood to Jefferson |           |               | (a) 4.89293 |
|                                  |                             |                   | 0         | 74 48 av      | 0.01547     |
|                                  |                             |                   | 4         | 33 33 av      | 9.76448     |
|                                  |                             |                   |           | 69 39 av      | 9.97201     |
|                                  |                             | 14 - Hood         |           |               | 4.67288     |
|                                  |                             | 14 - Jefferson    |           |               | 4.88041     |
| Sta 14<br>Hood<br>Tych Hill      | Hood - Tych Hill            |                   | 0         | 86-52 av      | (b) 4.68465 |
|                                  |                             |                   | 1         | 76 48 05      | 0.00165     |
|                                  |                             |                   | 2         | 76 24 55      | 9.45887     |
|                                  |                             |                   | 3         |               | 9.98767     |
|                                  |                             | 14 - Tych Hill    |           |               | 4.14407     |
|                                  |                             | 14 - Hood         |           |               | 4.67287     |
| Sta 14<br>Jefferson<br>Tych Hill | Jefferson - Tych Hill       |                   | 0+0       | 161 40 av     | (c) 4.93067 |
|                                  |                             |                   | 1-03      | 2 48 30       | 0.50232     |
|                                  |                             |                   | 2-11      | 15 31 10      | 8.69101     |
|                                  |                             |                   |           |               | 9.42743     |
|                                  |                             | 14 - Tych Hill    |           |               | 4.14400     |
|                                  |                             | 14 - Jefferson    |           |               | 4.88042     |
| 2 7<br>Jefferson<br>Hood         | Hood - Jeff                 |                   |           | 72 09 56      | 4.89293     |
|                                  |                             |                   |           | 43 42 39      | 0.02139     |
|                                  |                             |                   |           | 64 07 25      | 9.83949     |
|                                  |                             |                   |           |               | 9.95412     |
|                                  |                             | 2 7 - Hood        |           |               | 4.75381     |
|                                  |                             | " - Jeff          |           |               | 4.86844     |
| 2 7<br>Hood<br>Adams             | Hood - Adams                |                   |           | 42 57 56      | 4.97095     |
|                                  |                             |                   |           | 112 36 59     | 0.16650     |
|                                  |                             |                   |           | 24 25 05      | 9.96525     |
|                                  |                             |                   |           |               | 9.61636     |
|                                  |                             | 2 7 - Adams       |           |               | 5.10270     |
|                                  |                             | " - Hood          |           |               | 4.75381     |
| 2 7<br>Jeff<br>Adams             | Adams - Jeff                |                   |           | 115 07 52     | 5.23455     |
|                                  |                             |                   |           | 41 56 05      | 0.04319     |
|                                  |                             |                   |           | 22 56 03      | 9.82496     |
|                                  |                             |                   |           |               | 9.59070     |
|                                  |                             | 2 7 - Adams       |           |               | 5.10270     |
|                                  |                             | " - Jefferson     |           |               | 4.86844     |

| No. of Triangle.          | OBJECTS.          | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS.        |
|---------------------------|-------------------|-------------------|-----------|---------------|--------------------|
| Δ 14<br>Jeff<br>Hood      | Hood Jeff         |                   |           | 66 12 56      | 4.89293<br>0.03855 |
|                           |                   |                   |           | 52 43 15      | 9.90075            |
|                           |                   |                   |           | 61 03 49      | 9.94209            |
| Δ 14 —<br>" —             | Hood              |                   |           |               | 4.83223            |
|                           | Jeff              |                   |           |               | 4.87357            |
| Δ 17<br>Hood<br>Adams     | Hood - Adams      |                   |           | 37 50 56      | 4.97095<br>0.21213 |
|                           |                   |                   |           | 115 40 35     | 9.95485            |
|                           |                   |                   |           | 26 28 29      | 9.64914            |
| Δ 14 —<br>" —             | Adams             |                   |           |               | <del>5.83793</del> |
|                           | Hood              |                   |           |               | 4.83222            |
| Δ 14<br>Jeff<br>Adams     | Adams - Jefferson |                   |           | 104 03 52     | 5.23455<br>0.01322 |
|                           |                   |                   |           | 50 56 41      | 9.89016            |
|                           |                   |                   |           | 24 59 27      | 9.62580            |
| Δ 14 —<br>" —             | Adams             |                   |           |               | 5.13793            |
|                           | Jeff              |                   |           |               | 4.87357            |
| Δ 2-22<br>Jeff<br>Hood    | Hood - Jefferson  |                   |           | 58 15 56      | 4.89293<br>0.07033 |
|                           |                   |                   |           | 54 54 49      | 9.91291            |
|                           |                   |                   |           | 66 49 15      | 9.96345            |
| Δ 2 —<br>" —              | Hood              |                   |           |               | 4.87617            |
|                           | Jefferson         |                   |           |               | 4.92671            |
| Δ 2 —<br>Hood<br>Adams    | Hood - Adams      |                   |           | 39 23 56      | 4.97095<br>0.19742 |
|                           |                   |                   |           | 109 55 09     | 9.93326            |
|                           |                   |                   |           | 30 40 55      | 9.70780            |
| Δ 2 —<br>" —              | Adams             |                   |           |               | 5.14158            |
|                           | Hood              |                   |           |               | 4.87617            |
| Δ 2<br>Jefferson<br>Adams | Adams - Jefferson |                   |           | 97 39 52      | 5.23455<br>0.00390 |
|                           |                   |                   |           | 53 08 15      | 9.90313            |
|                           |                   |                   |           | 29 11 53      | 9.68827            |
| Δ 2 —<br>" —              | Adams             |                   |           |               | 5.14158            |
|                           | Jeff              |                   |           |               | 4.92672            |

| No. of Triangle.         | OBJECTS. | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES. | LOGARITHMS.                     |
|--------------------------|----------|-------------------|-----------|---------------|---------------------------------|
| b. 11-23<br>Jeff<br>Hood |          | Hood - Jefferson  |           | 56 25 56      | 4.89293<br>0.07923              |
|                          |          |                   |           | 51 54 37      | 9.89600                         |
|                          |          |                   |           | 71 39 27      | 9.97736-                        |
|                          |          | 2-11 - Hood       |           |               | 4.86816 <sup>u</sup>            |
|                          |          | " - Jeff          |           |               | 4.94952 <sup>u</sup>            |
| b<br>Hood<br>Adams       |          | Hood - Adams      |           | 42 36 56      | 4.97095 <sup>u</sup><br>0.16936 |
|                          |          |                   |           | 105 04 57     | 9.98478                         |
|                          |          |                   |           | 32 18 07      | 9.72785                         |
|                          |          | 2-11 - Adams      |           |               | 5.12509                         |
|                          |          | " - Hood          |           |               | 4.86816 <sup>u</sup>            |
| b 11-23<br>Jeff<br>Adams |          | Jefferson - Adams |           | 99 02 52      | 5.23455 <sup>u</sup><br>0.00544 |
|                          |          |                   |           | 50 08 03      | 9.88510                         |
|                          |          |                   |           | 30 49 05      | 9.70954                         |
|                          |          | 2-11 - Adams      |           |               | 5.12509                         |
|                          |          | " - Jeff 'n       |           |               | 4.94953 <sup>u</sup>            |
|                          |          |                   |           |               |                                 |
| b. 5-22<br>Jeff<br>Hood  |          | Hood - Jefferson  |           | 56 00 56      | 4.89293<br>0.08135 <sup>u</sup> |
|                          |          |                   |           | 54 36 59      | 9.91131                         |
|                          |          |                   |           | 69 22 05      | 9.97121                         |
|                          |          | 25 - Hood         |           |               | 4.88559 <sup>u</sup>            |
|                          |          | 25 - Jeff         |           |               | 4.94549 <sup>u</sup>            |
| b<br>Hood<br>Adams       |          | Hood - Adams      |           | 40 25 56      | 4.97095 <sup>u</sup><br>0.18806 |
|                          |          |                   |           | 107 22 19     | 9.97972                         |
|                          |          |                   |           | 32 11 45      | 9.72657                         |
|                          |          | b - Adams         |           |               | 5.13873 <sup>u</sup>            |
|                          |          | - Hood            |           |               | 4.88558 <sup>u</sup>            |
| b<br>Jeff<br>Adams       |          | Jefferson - Adams |           | 96 26 52      | 5.23455 <sup>u</sup><br>0.00276 |
|                          |          |                   |           | 52 50 25      | 9.90143                         |
|                          |          |                   |           | 30 42 43      | 9.70818                         |
|                          |          | 25 - Adams        |           |               | 5.13874 <sup>u</sup>            |
|                          |          | " - Jeff          |           |               | 4.94549 <sup>u</sup>            |

| No. of Triangle. | OBJECTS. | SPHERICAL ANGLES. | Sph. Exc. | PLANE ANGLES.       | LOGARITHMS. |
|------------------|----------|-------------------|-----------|---------------------|-------------|
|                  |          | Hood - Jefferson  |           |                     | 4.89293     |
| d. 5-31          |          |                   |           | 55 20 56            | 0.08480     |
| Jeff             |          |                   |           | 55 14 26            | 9.91463-    |
| Hood             |          |                   |           | 69 24 38            | 9.97133     |
|                  |          | " - Hood          |           |                     | 4.89236     |
|                  |          | " - Jeff          |           |                     | 4.94906     |
|                  |          | Hood - Adams      |           |                     | 4.97095     |
| d.               |          |                   |           | 40 07 56            | 0.19074     |
| Hood             |          |                   |           | 107 19 46           | 9.97983-    |
| Adams            |          |                   |           | 32 32 18            | 9.73067     |
|                  |          | " - Adams         |           |                     | 5.14152     |
|                  |          | " - Hood          |           |                     | 4.89236     |
|                  |          | Jefferson - A     |           |                     | 5.23455     |
| d.               |          |                   |           | 95 28 52            | 0.00199     |
| Jeff             |          |                   |           | 53 27 52            | 9.90498     |
| Adams            |          |                   |           | 31 03 16            | 9.71252     |
|                  |          | " - Adams         |           |                     | 5.14152     |
|                  |          | " - Jeff          |           |                     | 4.94906     |
|                  |          | Hood - Jefferson  |           |                     | 4.89293     |
| d.               |          |                   |           | 57 06 56            | 0.07584     |
| Jeff             |          |                   |           | 59 41 03            | 9.93614     |
| Hood             |          |                   |           | 63 12 01            | 9.95065     |
|                  |          | " - Hood          |           |                     | 4.90491     |
|                  |          | " - Jeff          |           |                     | 4.91942     |
|                  |          | Hood - Adams      |           |                     | 4.97095     |
| d.               |          | 36 54 56          |           | <del>44 01 52</del> | 0.22139     |
| Hood             |          | 113 32 23         |           | <del>57 54 30</del> | 9.96227     |
| Adams            |          | 29 32 41          |           | 3                   | 9.69294     |
|                  |          | " - Adams         |           |                     | 5.15461     |
|                  |          | " - Hood          |           |                     | 4.88528     |
|                  |          | Jefferson - Adams |           |                     | 5.23455     |
| d.               |          |                   |           | 94 01 52            | 0.00108     |
| Jeff             |          |                   |           | 57 54 30            |             |
| Adams            |          |                   |           | 28 03 38            | 9.67247     |
|                  |          | " - Adams         |           |                     |             |
|                  |          | " - Jefferson     |           |                     | 4.90810     |



| No. of Triangle. | OBJECTS.      | SPHERICAL ANGLES.       | Sph. Exc. | PLANE ANGLES. | LOGARITHMS. |
|------------------|---------------|-------------------------|-----------|---------------|-------------|
|                  |               | <i>Hood - Jefferson</i> |           |               | 4.89293     |
|                  | <i>b</i> 6-34 |                         |           | 47 29 56      | 0.13238     |
|                  | <i>Jeff</i>   |                         |           | 64 11 54      | 9.95439     |
|                  | <i>Hood</i>   |                         |           | 68 18 10      | 9.96809     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>b Hood</i>           |           |               | 4.97970     |
|                  |               | <i>" Jeff</i>           |           |               | 4.99340     |
|                  |               | <i>Hood - Adams</i>     |           |               | 4.97095     |
|                  | <i>b</i>      |                         |           | 35 21 56      | 0.23748     |
|                  | <i>Hood</i>   |                         |           | 108 26 14     | 9.97712     |
|                  | <i>Adams</i>  |                         |           | 36 11 50      | 9.77127     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>b - Adams</i>        |           |               | 5.18555     |
|                  |               | <i>b - Hood</i>         |           |               | 4.97970     |
|                  |               | <i>Jeff - Adams</i>     |           |               | 5.23455     |
|                  | <i>b</i>      |                         |           | 82 51 52      | 0.00338     |
|                  | <i>Jeff</i>   |                         |           | 62 25 20      | 9.94762     |
|                  | <i>Adams</i>  |                         |           | 34 42 48      | 9.75547     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>b - Adams</i>        |           |               | 5.18555     |
|                  |               | <i>" Jeff</i>           |           |               | 4.99340     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>Hood Jeff</i>        |           |               | 4.89293     |
|                  | <i>b</i> 9-37 |                         |           | 46 51 56      | 0.13683     |
|                  | <i>Jeff</i>   |                         |           | 70 23 54      | 9.97407     |
|                  | <i>Hood</i>   |                         |           | 62 44 10      | 9.94886     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>b - Hood</i>         |           |               | 5.00388     |
|                  |               | <i>" Jeff</i>           |           |               | 4.97862     |
|                  |               | <i>Hood - Adams</i>     |           |               | 4.97095     |
|                  | <i>b</i>      |                         |           | 31 35 26      | 0.28080     |
|                  | <i>Hood</i>   |                         |           | 114 09 14     | 9.96072     |
|                  | <i>Adams</i>  |                         |           | 34 24 20      | 9.75208     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>b - Adams</i>        |           |               | 5.21247     |
|                  |               | <i>" Hood</i>           |           |               | 5.00388     |
|                  |               | <i>Jeff - Adams</i>     |           |               | 5.23455     |
|                  | <i>b</i>      |                         |           | 78 27 22      | 0.00887     |
|                  | <i>Jeff</i>   |                         |           | 68 37 20      | 9.96904     |
|                  | <i>Adams</i>  |                         |           | 32 55 18      | 9.73569     |
|                  |               |                         |           |               | <hr/>       |
|                  |               | <i>b - Adams</i>        |           |               | 5.21246     |
|                  |               | <i>Jeff</i>             |           |               | 4.97881     |