

ROYAL OBSERVATORY, GREENWICH.

OBSERVATIONS OF γ DRACONIS

WITH THE ZENITH TUBE,

AND

REDUCTION OF THE OBSERVATIONS.

1842.

F 2

OBSERVATIONS WITH THE ZENITH TUBE,

OBSERVATIONS of γ DRACONIS, UNREDUCED.

| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
|---------------------------|------------------------|---------------------------|--|--|--|---------------------------|--------------------|--|-----------|
| | | | | | | Lower. | Upper. | | |
| Jan. 2 | W | V* | 45 ^r .725 45 ^r .800 | 101 ^r .880 102 ^r .750 | 100 ^r .520 101 ^r .416 | 38 ^o .2 | 37 ^o .0 | Observed at the top and bottom of the field: extremely tremulous. | R |
| Jan. 6 | E | V | 18 ^r .508 18 ^r .206 | 97 ^r .484 98 ^r .342 | 100 ^r .670 101 ^r .620 | 35 ^o .8 | 35 ^o .0 | Very faint and unsteady, and observed with difficulty, near the top and bottom of the field. | P |
| Jan. 26 | W | V* | 44 ^r .720 44 ^r .670 | 101 ^r .955 102 ^r .740 | 100 ^r .574 101 ^r .460 | 37 ^o .5 | 38 ^o .0 | Large and faint: observed near the top and bottom of the field. | W R |
| Jan. 27 | E | V | 19 ^r .306 19 ^r .255 | 97 ^r .123 97 ^r .980 | 100 ^r .655 101 ^r .556 | 38 ^o .0 | 37 ^o .2 | Very faint: observed near the top and bottom of the field. | R |
| Mar. 8 | W | V* | 48 ^r .520 | 101 ^r .372 102 ^r .213 | 100 ^r .570 101 ^r .470 | 43 ^o .2 | 42 ^o .8 | Tremulous. The reading of the Grand Micrometer, face West, is plainly incorrect. | R |
| | E | V | 19 ^r .898 | 96 ^r .250 97 ^r .135 | 100 ^r .688 101 ^r .590 | | | | |
| Mar. 22 | W | V* | 44 ^r .720 | 100 ^r .322 101 ^r .128 | 99 ^r .502 100 ^r .404 | 39 ^o .6 | 39 ^o .4 | Tremulous. | R |
| | E | V | 18 ^r .063 | 99 ^r .096 99 ^r .878 | 99 ^r .540 100 ^r .453 | | | | |
| Mar. 23 | W | V* | 44 ^r .480 | 100 ^r .500 101 ^r .318 | 99 ^r .507 100 ^r .386 | 39 ^o .6 | 38 ^o .0 | Obscured by clouds, and observed with great difficulty: the observations bad, especially on the East side. | R |
| | E | V | 17 ^r .569 | 98 ^r .960 99 ^r .723 | 99 ^r .580 100 ^r .463 | | | | |
| Mar. 25 | W | V* | 44 ^r .605 | 100 ^r .220 101 ^r .038 | 99 ^r .498 100 ^r .392 | 43 ^o .0 | 42 ^o .5 | The observations good. | R |
| | E | V | 18 ^r .198 | 99 ^r .185 99 ^r .956 | 99 ^r .536 100 ^r .437 | | | | |
| April 5 | W | V* | 44 ^r .598 | 100 ^r .590 101 ^r .387 | 99 ^r .475 100 ^r .346 | 41 ^o .2 | 41 ^o .5 | Tremulous. | R |
| | E | V | 18 ^r .015 | 98 ^r .966 99 ^r .788 | 99 ^r .556 100 ^r .412 | | | | |
| April 7 | W | V* | 44 ^r .900 | 100 ^r .850 101 ^r .625 | 99 ^r .520 100 ^r .378 | 43 ^o .0 | 46 ^o .0 | Very tremulous. | R |
| | E | V | 17 ^r .852 | 99 ^r .000 99 ^r .809 | 99 ^r .560 100 ^r .432 | | | | |

One revolution of Grand Micrometer = 6".711
 ,, of Lower Plumb-line Micrometer = 5".243
 ,, of Upper Plumb-line Micrometer = 4".168

March 16 and 17. The plumb-bobs were taken off from the lines for the purpose of cleaning them from cobwebs, &c. The wire plate was also taken off from the Grand Micrometer, and the wires were freed from cobwebs and dirt.

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 307 ^h 116 | 536 ^h 437 | 420 ^h 834 | + 1264 ^h 57 + c | " | 103 ^h 90 | + 9 ^h 28 | " |
| 123 ^h 194 | 513 ^h 358 | 421 ^h 573 | - 1058 ^h 13 - c | - 1160 ^h 67 | 102 ^h 54 | + 10 ^h 64 | 113 ^h 18 |
| 299 ^h 949 | 536 ^h 611 | 421 ^h 039 | + 1257 ^h 78 + c | | 97 ^h 90 | + 16 ^h 89 | |
| 129 ^h 388 | 511 ^h 465 | 421 ^h 410 | - 1062 ^h 26 - c | - 1159 ^h 87 | 97 ^h 61 | + 17 ^h 18 | 114 ^h 79 |
| 298 ^h 774 | 533 ^h 701 | 423 ^h 135 | + 1255 ^h 79 + c | | | | |
| 133 ^h 536 | 506 ^h 962 | 421 ^h 547 | - 1062 ^h 05 - c | - 1158 ^h 92 | 96 ^h 87 | + 24 ^h 36 | (121 ^h 23) |
| 300 ^h 116 | 528 ^h 101 | 416 ^h 604 | + 1245 ^h 00 + c | | | | |
| 121 ^h 221 | 521 ^h 610 | 416 ^h 787 | - 1059 ^h 62 - c | - 1152 ^h 31 | 92 ^h 69 | + 24 ^h 64 | 117 ^h 33 |
| 298 ^h 505 | 529 ^h 066 | 416 ^h 579 | + 1244 ^h 33 + c | | | | |
| 117 ^h 906 | 520 ^h 850 | 416 ^h 891 | - 1055 ^h 65 - c | - 1149 ^h 99 | 94 ^h 34 | + 24 ^h 58 | 118 ^h 92 |
| 299 ^h 345 | 527 ^h 598 | 416 ^h 571 | + 1243 ^h 70 + c | | | | |
| 122 ^h 127 | 522 ^h 046 | 416 ^h 745 | - 1060 ^h 92 - c | - 1152 ^h 31 | 91 ^h 39 | + 24 ^h 46 | 115 ^h 85 |
| 299 ^h 298 | 529 ^h 485 | 416 ^h 429 | + 1245 ^h 39 + c | | | | |
| 120 ^h 899 | 521 ^h 034 | 416 ^h 716 | - 1058 ^h 67 - c | - 1152 ^h 03 | 93 ^h 36 | + 23 ^h 56 | 116 ^h 92 |
| 301 ^h 324 | 530 ^h 791 | 416 ^h 587 | + 1248 ^h 88 + c | | | | |
| 119 ^h 805 | 521 ^h 180 | 416 ^h 783 | - 1057 ^h 77 - c | - 1153 ^h 33 | 95 ^h 55 | + 23 ^h 32 | 118 ^h 87 |

The correction + 0^h181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V^* , to the readings for wire V , has been applied in forming the Star's Apparent Zenith Distance, uncorrected, face West.

March 19. The plumb-lines were re-attached to a new metal rod by hooks passing through brass grooved rings, round which the lines were passed. Metal cisterns were provided also for the plumb-bobs to hang in. The wire frame was replaced; the microscopes adjusted to focus, and the tube was made vertical.

OBSERVATIONS WITH THE ZENITH TUBE,

OBSERVATIONS OF γ DRACONIS, UNREDUCED.

| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
|---------------------------|------------------------|---------------------------|------------------------------|--|--|---------------------------|--------|------------------------------------|-----------|
| | | | | | | Lower. | Upper. | | |
| April 10 | W | V* | 44.770 | 100.567 101.315 | 99.488 100.382 | 43.0 | 43.8 | Tremulous. | R |
| | E | V | 18.252 | 98.968 99.746 | 99.554 100.435 | | | | |
| April 19 | W | V* | 45.066 | 100.464 101.280 | 99.514 100.425 | 43.5 | 47.0 | Tremulous. | W R |
| | E | V | 18.220 | 98.860 99.598 | 99.640 100.478 | | | | |
| April 20 | W | V* | 45.055 | 100.485 101.326 | 99.455 100.352 | 43.6 | 49.8 | Very tremulous and unsatisfactory. | R |
| | E | V | 17.698 | 98.955 99.800 | 99.510 100.408 | | | | |
| April 22 | W | V* | 45.256 | 100.370 101.100 | 99.480 100.363 | 46.2 | 53.5 | Very tremulous. | R |
| | E | V | 17.813 | 99.102 99.865 | 99.530 100.413 | | | | |
| April 24 | W | V* | 45.220 | 100.248 101.055 | 99.508 100.382 | 48.5 | 56.0 | Tremulous. | R |
| | E | V | 17.678 | 99.298 100.083 | 99.512 100.398 | | | | |
| April 25 | W | V* | 45.194 | 100.507 101.324 | 99.562 100.420 | 48.0 | 59.0 | The observation tolerably good. | W R |
| | E | V | 17.782 | 99.355 100.104 | 99.573 100.395 | | | | |
| April 26 | W | V* | 45.383 | 100.420 101.238 | 99.482 100.372 | 48.2 | 55.7 | Exceedingly tremulous. | R |
| | E | V | 17.488 | 99.182 99.948 | 99.550 100.429 | | | | |
| April 27 | W | V* | 45.350 | 100.582 101.350 | 99.462 100.356 | 48.0 | 55.2 | Very tremulous. | R |
| | E | V | 17.898 | 99.155 99.950 | 99.552 100.428 | | | | |

One revolution of Grand Micrometer = 6".711
 ,, of Lower Plumb-line Micrometer = 5".243
 ,, of Upper Plumb-line Micrometer = 4".168

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 300 ^h 452 | 529 ^h 234 | 416 ^h 529 | + 1246 ^h 40 + c | " | " | " | " |
| 122 ^h 489 | 520 ^h 929 | 416 ^h 779 | - 1060 ^h 20 - c | - 1153 ^h 30 | 93 ^h 10 | + 22 ^h 96 | 116 ^h 06 |
| 302 ^h 438 | 528 ^h 871 | 416 ^h 675 | + 1248 ^h 17 + c | - 1153 ^h 87 | 94 ^h 30 | + 21 ^h 40 | 115 ^h 70 |
| 122 ^h 274 | 520 ^h 258 | 417 ^h 045 | - 1059 ^h 58 - c | | | | |
| 302 ^h 365 | 529 ^h 050 | 416 ^h 400 | + 1248 ^h 00 + c | - 1152 ^h 22 | 95 ^h 78 | + 21 ^h 22 | 117 ^h 00 |
| 118 ^h 772 | 521 ^h 039 | 416 ^h 628 | - 1056 ^h 44 - c | | | | |
| 303 ^h 713 | 528 ^h 153 | 416 ^h 474 | + 1248 ^h 52 + c | - 1153 ^h 17 | 95 ^h 35 | + 20 ^h 82 | 116 ^h 17 |
| 119 ^h 543 | 521 ^h 594 | 416 ^h 683 | - 1057 ^h 82 - c | | | | |
| 303 ^h 471 | 527 ^h 718 | 416 ^h 571 | + 1247 ^h 94 + c | - 1152 ^h 93 | 95 ^h 01 | + 20 ^h 38 | 115 ^h 39 |
| 118 ^h 638 | 522 ^h 675 | 416 ^h 612 | - 1057 ^h 93 - c | | | | |
| 303 ^h 297 | 529 ^h 102 | 416 ^h 762 | + 1249 ^h 34 + c | - 1154 ^h 14 | 95 ^h 20 | + 20 ^h 16 | 115 ^h 36 |
| 119 ^h 335 | 522 ^h 884 | 416 ^h 733 | - 1058 ^h 95 - c | | | | |
| 304 ^h 565 | 528 ^h 646 | 416 ^h 495 | + 1249 ^h 89 + c | - 1153 ^h 01 | 96 ^h 88 | + 19 ^h 94 | 116 ^h 82 |
| 117 ^h 362 | 522 ^h 020 | 416 ^h 758 | - 1056 ^h 14 - c | | | | |
| 304 ^h 344 | 529 ^h 365 | 416 ^h 420 | + 1250 ^h 31 + c | - 1154 ^h 57 | 95 ^h 74 | + 19 ^h 72 | 115 ^h 46 |
| 120 ^h 114 | 521 ^h 957 | 416 ^h 758 | - 1058 ^h 33 - c | | | | |

The correction + 0^h.181, to reduce the readings of the Grand Micrometer for the bisections of the star, Face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance uncorrected, Face West.

1844GOMM...4C...35A

OBSERVATIONS WITH THE ZENITH TUBE,

| OBSERVATIONS OF γ DRACONIS, UNREDUCED. | | | | | | | | | |
|---|------------------------|---------------------------|------------------------------|--|--|---------------------------|--------------------|-----------------|-----------|
| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
| | | | | | | Lower. | Upper. | | |
| April 28 | W | V* | 45 ^r .140 | 100 ^r .604 101 ^r .320 | 99 ^r .561 100 ^r .493 | 49 ^o .0 | 57 ^o .6 | | W R |
| | E | V | 17.782 | 99.355 100.104 | 99.573 100.395 | | | | |
| April 29 | W | V* | 45.556 | 100.506 101.318 | 99.450 100.348 | 49.2 | 54.2 | | R |
| | E | V | 17.752 | 99.195 100.020 | 99.520 100.423 | | | | |
| May 1 | W | V* | 45.486 | 100.903 101.695 | 99.486 100.362 | 50.0 | 53.0 | Tremulous. | R |
| | E | V | 17.398 | 99.145 99.947 | 99.520 100.416 | | | | |
| May 2 | W | V* | 45.496 | 100.620 101.367 | 99.612 100.584 | 45.5 | 51.0 | Good. | W R |
| | E | V | 17.455 | 99.397 100.136 | 99.586 100.430 | | | | |
| May 10 | W | V* | 46.052 | 100.270 101.095 | 99.478 100.362 | 50.0 | 50.7 | Very cloudy. | R |
| | E | V | 17.235 | 103.125 103.960 | 99.460 100.348 | | | | |
| May 12 | W | V* | 46.050 | 100.568 101.365 | 99.517 100.402 | 51.2 | 50.3 | Good. | R |
| | E | V | 16.882 | 99.582 100.350 | 99.530 100.426 | | | | |
| May 16 | W | V* | 46.450 | 100.526 101.350 | 99.502 100.389 | 51.2 | 56.2 | Very tremulous. | R |
| | E | V | 16.382 | 99.446 100.238 | 99.525 100.418 | | | | |
| May 24 | W | V* | 46.610 | 100.408 101.155 | 99.586 100.384 | 52.0 | 54.0 | Very good. | W R |
| | E | V | 16.238 | 99.638 100.324 | 99.556 100.390 | | | | |
| One revolution of Grand Micrometer | | | | | | = | 6".711 | | |
| ,, of Lower Plumb-line Micrometer | | | | | | = | 5".243 | | |
| ,, of Upper Plumb-line Micrometer | | | | | | = | 4".168 | | |
| <p>May 10. On examining the instrument, to endeavour to account for the sudden change in the reading of the lower plumb-line, the auxiliary plumb-line was found thrown out of its groove: this was most probably occasioned by the cord which closes the shutter having come in contact with it.</p> | | | | | | | | | |

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 302 ^u 934 | 529 ^u 344 | 416 ^u 912 | + 1249 ^u 37 + c | " | " | " | " |
| 119 ^u 335 | 522 ^u 884 | 416 ^u 733 | - 1058 ^u 95 - c | - 1154 ^u 16 | 95 ^u 21 | + 19 ^u 50 | 114 ^u 71 |
| 305 ^u 727 | 529 ^u 081 | 416 ^u 378 | + 1251 ^u 37 + c | - 1154 ^u 71 | 96 ^u 66 | + 19 ^u 28 | 115 ^u 94 |
| 119 ^u 134 | 522 ^u 245 | 416 ^u 683 | - 1058 ^u 06 - c | - 1154 ^u 19 | 98 ^u 84 | + 18 ^u 84 | 117 ^u 68 |
| 305 ^u 256 | 531 ^u 111 | 410 ^u 483 | + 1253 ^u 03 + c | - 1154 ^u 64 | 97 ^u 58 | + 18 ^u 57 | 116 ^u 15 |
| 116 ^u 758 | 521 ^u 920 | 416 ^u 666 | - 1055 ^u 34 - c | - 1154 ^u 66 | 98 ^u 92 | + 16 ^u 41 | 115 ^u 33 |
| 305 ^u 323 | 529 ^u 512 | 417 ^u 208 | + 1252 ^u 22 + c | - 1154 ^u 68 | 100 ^u 55 | + 15 ^u 84 | 116 ^u 39 |
| 117 ^u 141 | 523 ^u 079 | 416 ^u 833 | - 1057 ^u 05 - c | - 1153 ^u 90 | 103 ^u 81 | + 14 ^u 64 | 118 ^u 45 |
| 309 ^u 055 | 527 ^u 881 | 416 ^u 466 | + 1253 ^u 58 + c | - 1154 ^u 16 | 103 ^u 96 | + 12 ^u 18 | 116 ^u 14 |
| 309 ^u 042 | 529 ^u 371 | 416 ^u 633 | + 1255 ^u 23 + c | | | | |
| 113 ^u 295 | 524 ^u 122 | 416 ^u 708 | - 1054 ^u 13 - c | | | | |
| 311 ^u 726 | 529 ^u 230 | 416 ^u 575 | + 1257 ^u 71 + c | | | | |
| 109 ^u 939 | 523 ^u 471 | 416 ^u 683 | - 1050 ^u 09 - c | | | | |
| 312 ^u 800 | 528 ^u 399 | 416 ^u 737 | + 1258 ^u 12 + c | | | | |
| 109 ^u 309 | 524 ^u 200 | 416 ^u 688 | - 1050 ^u 20 - c | | | | |

The correction + 0^u181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance, uncorrected, face West.

May 10. In the reduction, the observation face East is rejected, and the assumed value of c is the mean of the preceding and following values.

OBSERVATIONS WITH THE ZENITH TUBE,

OBSERVATIONS OF γ DRACONIS, UNREDUCED.

| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
|---------------------------|------------------------|---------------------------|------------------------------|--|--|---------------------------|--------|---|-----------|
| | | | | | | Lower. | Upper. | | |
| June 2 | W | V* | 47·253 | 100·294 101·105 | 99·507 100·362 | 55·0 | 64·0 | Tremulous. | W R |
| | E | V | 16·325 | 99·964 99·665 | 99·710 100·495 | | | | |
| June 3 | W | V* | 47·025 | 100·396 101·223 | 99·493 100·390 | 56·8 | 62·0 | Good. | R |
| | E | V | 15·586 | 99·518 100·350 | 99·526 100·438 | | | | |
| June 6 | W | V* | 47·576 | 100·150 100·935 | 99·489 100·362 | 58·9 | 64·5 | Very tremulous. | R |
| | E | V | 15·601 | 99·736 100·473 | 99·550 100·443 | | | | |
| June 8 | W | V* | 47·500 | 100·236 101·028 | 99·475 100·368 | 58·0 | 62·0 | Pretty good. | R |
| | E | V | 15·738 | 99·570 100·312 | 99·532 100·426 | | | | |
| June 9 | W | V* | 47·650 | 100·225 100·963 | 99·563 100·486 | 57·5 | 64·5 | | W R |
| | E | V | 15·648 | 99·680 100·424 | 99·546 100·420 | | | | |
| June 10 | W | V* | 47·532 | 100·192 101·023 | 99·476 100·370 | 57·8 | 61·5 | Good. | R |
| | E | V | 15·763 | 99·387 100·176 | 99·515 100·426 | | | | |
| June 11 | W | V* | 47·332 | 100·462 101·162 | 99·329 100·489 | 62·0 | 66·7 | The plumb-line was not quite steady at the second reading, face East. | M |
| | E | V | 15·660 | 99·139 99·790 | 99·507 100·339 | | | | |
| June 13 | W | V* | 47·712 | 100·294 101·050 | 99·490 100·422 | 61·0 | 63·6 | Clouds prevented the second observation. | P |

One revolution of Grand Micrometer = 6''·711
 ,, of Lower Plumb-line Micrometer = 5''·243
 ,, of Upper Plumb-line Micrometer = 4''·168

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 317 ^h 115 | 527 ^h 970 | 416 ^h 529 | + 1261 ^h 80 + c | " | " | " | " |
| 109 ^h 557 | 520 ^h 708 | 417 ^h 230 | - 1047 ^h 50 - c | - 1154 ^h 65 | 107 ^h 15 | + 9 ^h 26 | 116 ^h 41 |
| 315 ^h 585 | 528 ^h 546 | 416 ^h 558 | + 1260 ^h 87 + c | - 1153 ^h 07 | 107 ^h 80 | + 8 ^h 92 | 116 ^h 72 |
| 104 ^h 598 | 523 ^h 954 | 416 ^h 724 | - 1045 ^h 28 - c | - 1154 ^h 72 | 108 ^h 38 | + 7 ^h 90 | 116 ^h 28 |
| 319 ^h 283 | 527 ^h 148 | 416 ^h 491 | + 1263 ^h 10 + c | - 1154 ^h 68 | 108 ^h 36 | + 7 ^h 22 | 115 ^h 58 |
| 104 ^h 699 | 524 ^h 850 | 416 ^h 787 | - 1046 ^h 34 - c | - 1155 ^h 30 | 108 ^h 98 | + 6 ^h 88 | 115 ^h 86 |
| 318 ^h 773 | 527 ^h 613 | 416 ^h 474 | + 1263 ^h 04 + c | - 1154 ^h 38 | 108 ^h 76 | + 6 ^h 54 | 115 ^h 30 |
| 105 ^h 618 | 523 ^h 991 | 416 ^h 712 | - 1046 ^h 32 - c | - 1152 ^h 94 | 109 ^h 86 | + 6 ^h 21 | 116 ^h 07 |
| 319 ^h 780 | 527 ^h 415 | 416 ^h 904 | + 1264 ^h 28 + c | - 1154 ^h 33 | 110 ^h 49 | + 5 ^h 55 | 116 ^h 04 |
| 105 ^h 014 | 524 ^h 572 | 416 ^h 729 | - 1046 ^h 32 - c | | | | |
| 318 ^h 987 | 527 ^h 488 | 416 ^h 479 | + 1263 ^h 14 + c | | | | |
| 105 ^h 786 | 523 ^h 156 | 416 ^h 675 | - 1045 ^h 62 - c | | | | |
| 317 ^h 644 | 528 ^h 556 | 416 ^h 420 | + 1262 ^h 80 + c | | | | |
| 105 ^h 095 | 521 ^h 495 | 416 ^h 479 | - 1043 ^h 07 - c | | | | |
| 320 ^h 195 | 527 ^h 823 | 416 ^h 616 | + 1264 ^h 82 + c | | | | |

The correction + 0^h.181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance, uncorrected, face West.

June 13. The assumed value of c is the mean of the preceding and following values.

OBSERVATIONS WITH THE ZENITH TUBE,

| OBSERVATIONS of γ DRACONIS, UNREDUCED. | | | | | | | | | |
|---|------------------------|---------------------------|------------------------------|--|--|---------------------------|---------------------|----------------------------------|-----------|
| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
| | | | | | | Lower. | Upper. | | |
| June 14 | W | V* | 47 ^r 955 | 99 ^r 936 100 ^r 742 | 99 ^r 486 100 ^r 398 | 64 ^o 0 | 66 ^o 0 | | R |
| | E | V | 15 ^r 615 | 99 ^r 802 100 ^r 605 | 99 ^r 506 100 ^r 412 | | | | |
| June 15 | W | V* | 47 ^r 950 | 100 ^r 002 100 ^r 812 | 99 ^r 498 100 ^r 410 | 61 ^o 0 | 62 ^o 0 | Cloudy. | R |
| | E | V | 15 ^r 372 | 99 ^r 700 100 ^r 525 | 99 ^r 535 100 ^r 440 | | | | |
| June 16 | W | V* | 48 ^r 322 | 99 ^r 800 100 ^r 630 | 99 ^r 513 100 ^r 435 | 61 ^o 2 | 64 ^o 8 | Cloudy ; seen only for a moment. | P |
| | E | | | | | | | | |
| June 21 | W | V* | 48 ^r 350 | 99 ^r 742 100 ^r 580 | 99 ^r 520 100 ^r 445 | 60 ^o 0 | 59 ^o 5 | | R |
| | E | V | 14 ^r 956 | 99 ^r 872 100 ^r 656 | 99 ^r 542 100 ^r 440 | | | | |
| June 28 | W | V* | 48 ^r 856 | 99 ^r 620 100 ^r 418 | 99 ^r 512 100 ^r 436 | 60 ^o 2 | 61 ^o 5 | | R |
| | E | V | 14 ^r 593 | 99 ^r 986 100 ^r 790 | 99 ^r 520 100 ^r 416 | | | | |
| June 29 | W | V* | 48 ^r 794 | 99 ^r 759 100 ^r 420 | 99 ^r 588 100 ^r 332 | 60 ^o 0 | 67 ^o 0 | | M |
| | E | V | 14 ^r 358 | 99 ^r 952 100 ^r 620 | 99 ^r 528 100 ^r 375 | | | | |
| July 2 | W | V* | 48 ^r 700 | 99 ^r 842 100 ^r 664 | 99 ^r 526 100 ^r 420 | 57 ^o 0 | 58 ^o 6 | | R |
| | E | V | 14 ^r 545 | 99 ^r 805 100 ^r 602 | 99 ^r 502 100 ^r 402 | | | | |
| July 4 | W | V* | 48 ^r 930 | 99 ^r 578 100 ^r 432 | 99 ^r 500 100 ^r 403 | 60 ^o 2 | 66 ^o 8 | | R |
| | E | V | 14 ^r 363 | 99 ^r 900 100 ^r 703 | 99 ^r 495 100 ^r 400 | | | | |
| One revolution of Grand Micrometer | | | | | | = | 6 ^r .711 | | |
| ,, of Lower Plumb-line Micrometer | | | | | | = | 5 ^r .243 | | |
| ,, of Upper Plumb-line Micrometer | | | | | | = | 4 ^r .168 | | |

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 321 ^{''} 827 | 526 ^{''} 077 | 416 ^{''} 558 | + 1264 ^{''} 64 + c | " | " | " | " |
| 104 ^{''} 793 | 525 ^{''} 370 | 416 ^{''} 628 | - 1046 ^{''} 79 - c | - 1155 ^{''} 72 | 108 ^{''} 92 | + 5 ^{''} 22 | 114 ^{''} 14 |
| 321 ^{''} 793 | 526 ^{''} 434 | 416 ^{''} 608 | + 1265 ^{''} 02 + c | - 1154 ^{''} 91 | 110 ^{''} 11 | + 4 ^{''} 89 | 115 ^{''} 00 |
| 103 ^{''} 161 | 524 ^{''} 892 | 416 ^{''} 749 | - 1044 ^{''} 80 - c | - 1154 ^{''} 91 | 110 ^{''} 11 | + 4 ^{''} 89 | 115 ^{''} 00 |
| 324 ^{''} 288 | 525 ^{''} 427 | 416 ^{''} 692 | + 1266 ^{''} 59 + c | - 1154 ^{''} 79 | 111 ^{''} 80 | + 4 ^{''} 56 | 116 ^{''} 36 |
| 324 ^{''} 477 | 525 ^{''} 144 | 416 ^{''} 729 | + 1266 ^{''} 53 + c | - 1154 ^{''} 67 | 111 ^{''} 86 | + 2 ^{''} 91 | 114 ^{''} 77 |
| 100 ^{''} 370 | 525 ^{''} 685 | 416 ^{''} 762 | - 1042 ^{''} 82 - c | - 1154 ^{''} 67 | 111 ^{''} 86 | + 2 ^{''} 91 | 114 ^{''} 77 |
| 327 ^{''} 873 | 524 ^{''} 399 | 416 ^{''} 692 | + 1269 ^{''} 15 + c | - 1155 ^{''} 04 | 114 ^{''} 11 | + 0 ^{''} 60 | 114 ^{''} 71 |
| 97 ^{''} 934 | 526 ^{''} 334 | 416 ^{''} 666 | - 1040 ^{''} 93 - c | - 1155 ^{''} 04 | 114 ^{''} 11 | + 0 ^{''} 60 | 114 ^{''} 71 |
| 327 ^{''} 457 | 524 ^{''} 772 | 416 ^{''} 633 | + 1269 ^{''} 04 + c | - 1153 ^{''} 90 | 115 ^{''} 14 | + 0 ^{''} 27 | 115 ^{''} 41 |
| 96 ^{''} 357 | 525 ^{''} 799 | 416 ^{''} 599 | - 1038 ^{''} 76 - c | - 1153 ^{''} 90 | 115 ^{''} 14 | + 0 ^{''} 27 | 115 ^{''} 41 |
| 326 ^{''} 826 | 525 ^{''} 627 | 416 ^{''} 688 | + 1269 ^{''} 32 + c | - 1154 ^{''} 45 | 114 ^{''} 87 | - 0 ^{''} 68 | 114 ^{''} 19 |
| 97 ^{''} 612 | 525 ^{''} 370 | 416 ^{''} 599 | - 1039 ^{''} 58 - c | - 1154 ^{''} 45 | 114 ^{''} 87 | - 0 ^{''} 68 | 114 ^{''} 19 |
| 323 ^{''} 369 | 524 ^{''} 326 | 416 ^{''} 599 | + 1269 ^{''} 48 + c | - 1154 ^{''} 16 | 115 ^{''} 32 | - 1 ^{''} 30 | 114 ^{''} 02 |
| 96 ^{''} 390 | 525 ^{''} 878 | 416 ^{''} 583 | - 1038 ^{''} 85 - c | - 1154 ^{''} 16 | 115 ^{''} 32 | - 1 ^{''} 30 | 114 ^{''} 02 |

The correction + 0^{''}.181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V^* , to the readings for wire V , has been applied in forming the Star's Apparent Zenith Distance uncorrected, face West.

June 16. The assumed value of c is the mean of the preceding and following values.

OBSERVATIONS WITH THE ZENITH TUBE,

OBSERVATIONS OF γ DRACONIS, UNREDUCED.

| Day of Observation, 1842. | Position of Eye- piece. | Wire of Grand Micro- meter. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
|------------------------------------|----------------------------------|---|------------------------------------|---|---|------------------------------|--------|-----------------|-----------|
| | | | | | | Lower. | Upper. | | |
| July 5 | W | V* | 48.706 | 100.334 101.084 | 99.505 100.330 | 60.0 | 60.5 | | W R |
| | E | V | 14.471 | 99.366 100.126 | 99.565 100.406 | | | | |
| July 6 | W | V* | 48.802 | 100.513 101.312 | 99.480 100.365 | 58.6 | 60.9 | Faint. | R |
| | E | V | 14.552 | 99.195 99.985 | 99.528 100.408 | | | | |
| July 11 | W | V* | 49.158 | 99.836 100.650 | 99.500 100.396 | 60.2 | 66.8 | Cloudy. | R |
| | E | V | 14.286 | 99.480 100.306 | 99.538 100.430 | | | | |
| July 12 | W | V* | 49.230 | 100.105 100.847 | 99.535 100.390 | 59.5 | 66.0 | Satisfactory. | W R |
| | E | V | 13.997 | 99.573 100.303 | 99.554 100.410 | | | | |
| July 13 | W | V* | 49.200 | 99.975 100.788 | 99.470 100.368 | 60.5 | 64.8 | | R |
| | E | V | 14.105 | 99.546 100.412 | 99.531 100.412 | | | | |
| July 14 | W | V* | 49.174 | 100.080 100.880 | 99.535 100.380 | 60.0 | 65.0 | Very good. | W R |
| | E | V | 14.006 | 99.544 100.285 | 99.556 100.424 | | | | |
| July 15 | W | V* | 49.195 | 100.210 101.065 | 99.482 100.400 | 59.5 | 65.6 | | R |
| | E | V | 14.097 | 99.486 100.270 | 99.552 100.445 | | | | |
| July 21 | W | V* | 49.405 | 100.202 101.055 | 99.486 100.398 | 58.0 | 59.8 | Very tremulous. | R |
| | E | V | 14.028 | 99.200 99.995 | 99.560 100.437 | | | | |
| One revolution of Grand Micrometer | | | | | | = | 6".711 | | |
| " of Lower Plumb-line Micrometer | | | | | | = | 5".243 | | |
| " of Upper Plumb-line Micrometer | | | | | | = | 4".168 | | |

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 326 ^h 866 | 528 ^h 017 | 416 ^h 458 | + 1271 ^h 52 + c | " | " | " | " |
| 97 ^h 115 | 522 ^h 968 | 416 ^h 737 | - 1036 ^h 82 - c | - 1154 ^h 17 | 117 ^h 35 | - 1 ^h 61 | 115 ^h 74 |
| 327 ^h 510 | 529 ^h 087 | 416 ^h 474 | + 1273 ^h 25 + c | | | | |
| 97 ^h 659 | 522 ^h 151 | 416 ^h 666 | - 1036 ^h 48 - c | - 1154 ^h 86 | 118 ^h 39 | - 1 ^h 92 | 116 ^h 47 |
| 329 ^h 900 | 525 ^h 575 | 416 ^h 583 | + 1272 ^h 24 + c | | | | |
| 95 ^h 873 | 523 ^h 739 | 416 ^h 733 | - 1036 ^h 35 - c | - 1154 ^h 29 | 117 ^h 95 | - 3 ^h 45 | 114 ^h 50 |
| 330 ^h 382 | 526 ^h 795 | 416 ^h 646 | + 1274 ^h 00 + c | | | | |
| 93 ^h 934 | 524 ^h 237 | 416 ^h 724 | - 1034 ^h 90 - c | - 1154 ^h 45 | 119 ^h 55 | - 3 ^h 74 | 115 ^h 81 |
| 330 ^h 181 | 526 ^h 302 | 416 ^h 462 | + 1273 ^h 13 + c | | | | |
| 94 ^h 659 | 524 ^h 190 | 416 ^h 679 | - 1035 ^h 53 - c | - 1154 ^h 33 | 118 ^h 80 | - 4 ^h 03 | 114 ^h 77 |
| 330 ^h 007 | 526 ^h 816 | 416 ^h 620 | + 1273 ^h 62 + c | | | | |
| 93 ^h 994 | 523 ^h 854 | 416 ^h 758 | - 1034 ^h 61 - c | - 1154 ^h 12 | 119 ^h 50 | - 4 ^h 32 | 115 ^h 18 |
| 330 ^h 148 | 527 ^h 645 | 416 ^h 554 | + 1274 ^h 53 + c | | | | |
| 94 ^h 605 | 523 ^h 660 | 416 ^h 796 | - 1035 ^h 06 - c | - 1154 ^h 79 | 119 ^h 74 | - 4 ^h 61 | 115 ^h 13 |
| 331 ^h 557 | 527 ^h 598 | 416 ^h 558 | + 1275 ^h 89 + c | | | | |
| 94 ^h 142 | 522 ^h 193 | 416 ^h 796 | - 1033 ^h 13 - c | - 1154 ^h 51 | 121 ^h 38 | - 6 ^h 32 | 115 ^h 06 |

The correction + 0^h.181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance uncorrected, face West.

OBSERVATIONS WITH THE ZENITH TUBE,

| OBSERVATIONS OF γ DRACONIS, UNREDUCED. | | | | | | | | | |
|---|------------------------|----------------------------|------------------------------|--|--|---------------------------|-------------------|--|-----------|
| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micro-meter. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
| | | | | | | Lower. | Upper. | | |
| July 23 | W | V* | 49 ^r 498 | 100 ^r 195 101 ^r 025 | 99 ^r 475 100 ^r 386 | 59 ^o 3 | 64 ^o 0 | Good. | R |
| | E | V | 13 ^r 847 | 99 ^r 272 100 ^r 098 | 99 ^r 516 100 ^r 417 | | | | |
| July 25 | W | V* | 49 ^r 612 | 100 ^r 130 101 ^r 015 | 99 ^r 501 100 ^r 406 | 60 ^o 2 | 66 ^o 8 | Cloudy and tremulous. | R |
| | E | V | 13 ^r 795 | 99 ^r 250 100 ^r 086 | 99 ^r 552 100 ^r 425 | | | | |
| July 26 | W | V* | 49 ^r 768 | 100 ^r 152 101 ^r 000 | 99 ^r 512 100 ^r 398 | 59 ^o 5 | 67 ^o 5 | Tremulous. | R |
| | E | V | 13 ^r 625 | 99 ^r 202 100 ^r 025 | 99 ^r 522 100 ^r 413 | | | | |
| July 28 | W | V* | 49 ^r 702 | 100 ^r 120 100 ^r 925 | 99 ^r 490 100 ^r 370 | 61 ^o 5 | 64 ^o 5 | Very good. | W R |
| | E | V | 13 ^r 684 | 99 ^r 345 100 ^r 087 | 99 ^r 580 100 ^r 420 | | | | |
| July 29 | W | V* | 49 ^r 812 | 100 ^r 140 100 ^r 970 | 99 ^r 533 100 ^r 340 | 58 ^o 0 | 58 ^o 0 | Very good. | W R |
| | E | V | 13 ^r 866 | 99 ^r 205 99 ^r 999 | 99 ^r 585 100 ^r 433 | | | | |
| Aug. 1 | W | V* | 49 ^r 846 | 100 ^r 226 100 ^r 980 | 99 ^r 530 100 ^r 386 | 58 ^o 6 | 66 ^o 4 | Very good. | W R |
| | E | V | 13 ^r 414 | 99 ^r 288 100 ^r 032 | 99 ^r 566 100 ^r 434 | | | | |
| Aug. 2 | W | V* | 50 ^r 005 | 100 ^r 170 101 ^r 002 | 99 ^r 513 100 ^r 354 | 59 ^o 5 | 68 ^o 0 | Very good. | W R |
| | E | V | 13 ^r 236 | 99 ^r 314 100 ^r 070 | 99 ^r 600 100 ^r 454 | | | | |
| Aug. 3 | W | V* | 50 ^r 251 | 99 ^r 991 100 ^r 660 | 99 ^r 578 100 ^r 380 | 61 ^o 3 | 70 ^o 2 | The second bisection of the star rather hurried. | M |
| | E | V | 12 ^r 988 | 99 ^r 440 100 ^r 109 | 99 ^r 568 100 ^r 388 | | | | |

One revolution of Grand Micrometer = 6".711
 „ of Lower Plumb-line Micrometer = 5".243
 „ of Upper Plumb-line Micrometer = 4".168

Aug. 1. The first reading of the lower Plumb-line Micrometer, face W., was set down 99^o226.

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 332 ^{''} 181 | 527 ^{''} 498 | 416 ^{''} 508 | + 1278 ^{''} 37 + c | " | " | " | " |
| 92·927 | 522·648 | 416·662 | - 1032·24 - c | - 1154·30 | 122·07 | - 6·84 | 115·23 |
| 332·946 | 527·305 | 416·604 | + 1277·04 + c | | | | |
| 92·579 | 522·560 | 416·753 | - 1031·89 - c | - 1154·46 | 122·58 | - 7·36 | 115·22 |
| 333·994 | 527·320 | 416·612 | + 1278·11 + c | | | | |
| 91·438 | 522·276 | 416·662 | - 1030·38 - c | - 1154·24 | 123·87 | - 7·62 | 116·25 |
| 333·550 | 527·038 | 416·508 | + 1277·28 + c | | | | |
| 91·834 | 522·810 | 416·800 | - 1031·44 - c | - 1154·36 | 122·92 | - 8·14 | 114·78 |
| 334·288 | 527·210 | 416·537 | + 1278·22 + c | | | | |
| 93·055 | 522·213 | 416·837 | - 1032·11 - c | - 1155·16 | 123·06 | - 8·40 | 114·66 |
| 334·516 | 527·462 | 416·624 | + 1278·78 + c | | | | |
| 90·021 | 522·518 | 416·800 | - 1029·34 - c | - 1154·06 | 124·72 | - 9·12 | 115·60 |
| 335·584 | 527·372 | 416·525 | + 1279·66 + c | | | | |
| 88·826 | 522·685 | 416·912 | - 1028·42 - c | - 1154·04 | 125·62 | - 9·35 | 116·27 |
| 337·235 | 526·009 | 416·712 | + 1280·14 + c | | | | |
| 87·163 | 523·120 | 416·708 | - 1026·99 - c | - 1153·56 | 126·58 | - 9·58 | 117·00 |

The correction + 0^{''}·181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance uncorrected, face West.

1844GOMM...4C...35A

OBSERVATIONS WITH THE ZENITH TUBE,

| OBSERVATIONS of γ DRACONIS, UNREDUCED. | | | | | | | | | |
|---|------------------------|---------------------------|------------------------------|--|--|---------------------------|--------|-----------------|-----------|
| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
| | | | | | | Lower. | Upper. | | |
| Aug. 4 | W | V* | 49·987 | 100·004 100·790 | 99·536 100·350 | 61·0 | 70·0 | Very good. | W R |
| | E | V | 13·235 | 99·353 100·080 | 99·600 100·412 | | | | |
| Aug. 5 | W | V* | 50·133 | 99·960 100·659 | 99·539 100·356 | 62·7 | 72·3 | | M |
| | E | V | 13·019 | 99·529 100·168 | 99·511 100·361 | | | | |
| Aug. 8 | W | V* | 50·115 | 100·092 100·890 | 99·492 100·370 | 62·0 | 70·0 | Very good. | W R |
| | E | V | 13·210 | 99·346 100·144 | 99·554 100·386 | | | | |
| Aug. 9 | W | V* | 50·122 | 99·927 100·728 | 99·522 100·370 | 62·2 | 74·0 | Very good. | W R |
| | E | V | 12·930 | 99·505 100·256 | 99·550 100·415 | | | | |
| Aug. 11 | W | V* | 50·369 | 99·950 100·646 | 99·537 100·383 | 63·0 | 67·3 | | M |
| | E | V | 13·022 | 99·549 100·228 | 99·537 100·356 | | | | |
| Aug. 12 | W | V* | 50·217 | 100·124 100·880 | 99·550 100·328 | 62·8 | 70·0 | Very good. | W R |
| | E | V | 13·000 | 99·343 100·118 | 99·577 100·436 | | | | |
| Aug. 13 | W | V* | 50·308 | 99·892 100·611 | 99·604 100·361 | 63·8 | 70·0 | Very good. | M |
| | E | V | 12·865 | 99·518 100·196 | 99·557 100·390 | | | | |
| Aug. 15 | W | V* | 50·534 | 99·880 100·670 | 99·530 100·377 | 64·0 | 75·0 | Tolerably good. | W R |
| | E | V | 12·580 | 99·562 100·283 | 99·543 100·402 | | | | |
| One revolution of Grand Micrometer | | | | | | = | 67·711 | | |
| ,, of Lower Plumb-line Micrometer | | | | | | = | 57·243 | | |
| ,, of Upper Plumb-line Micrometer | | | | | | = | 47·168 | | |

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 335 ^{''} 463 | 526 ^{''} 382 | 416 ^{''} 563 | + 1278 ^{''} 59 + c | " | " | " | " |
| 88 ^{''} 820 | 522 ^{''} 816 | 416 ^{''} 825 | - 1028 ^{''} 46 - c | - 1153 ^{''} 52 | 125 ^{''} 07 | - 9 ^{''} 81 | 115 ^{''} 26 |
| 336 ^{''} 442 | 525 ^{''} 925 | 416 ^{''} 579 | + 1279 ^{''} 13 + c | - 1153 ^{''} 27 | 125 ^{''} 86 | - 10 ^{''} 04 | 115 ^{''} 82 |
| 87 ^{''} 370 | 523 ^{''} 508 | 416 ^{''} 533 | - 1027 ^{''} 41 - c | | | | |
| 336 ^{''} 322 | 526 ^{''} 874 | 416 ^{''} 512 | + 1279 ^{''} 89 + c | - 1154 ^{''} 09 | 125 ^{''} 80 | - 10 ^{''} 73 | 115 ^{''} 07 |
| 88 ^{''} 652 | 522 ^{''} 963 | 416 ^{''} 675 | - 1028 ^{''} 29 - c | | | | |
| 336 ^{''} 318 | 526 ^{''} 020 | 416 ^{''} 575 | + 1279 ^{''} 09 + c | - 1153 ^{''} 13 | 125 ^{''} 96 | - 10 ^{''} 96 | 115 ^{''} 00 |
| 86 ^{''} 773 | 523 ^{''} 670 | 416 ^{''} 729 | - 1027 ^{''} 17 - c | | | | |
| 337 ^{''} 976 | 525 ^{''} 863 | 416 ^{''} 633 | + 1280 ^{''} 65 + c | - 1154 ^{''} 17 | 126 ^{''} 48 | - 11 ^{''} 32 | 115 ^{''} 16 |
| 87 ^{''} 390 | 523 ^{''} 717 | 416 ^{''} 579 | - 1027 ^{''} 69 - c | | | | |
| 337 ^{''} 006 | 526 ^{''} 932 | 416 ^{''} 545 | + 1280 ^{''} 66 + c | - 1153 ^{''} 81 | 126 ^{''} 85 | - 11 ^{''} 50 | 115 ^{''} 35 |
| 87 ^{''} 243 | 522 ^{''} 889 | 416 ^{''} 825 | - 1026 ^{''} 96 - c | | | | |
| 337 ^{''} 617 | 525 ^{''} 621 | 416 ^{''} 724 | + 1280 ^{''} 14 + c | - 1153 ^{''} 36 | 126 ^{''} 78 | - 11 ^{''} 68 | 115 ^{''} 10 |
| 86 ^{''} 338 | 523 ^{''} 550 | 416 ^{''} 692 | - 1026 ^{''} 58 - c | | | | |
| 339 ^{''} 134 | 525 ^{''} 742 | 416 ^{''} 608 | + 1281 ^{''} 67 + c | - 1153 ^{''} 34 | 128 ^{''} 33 | - 12 ^{''} 04 | 116 ^{''} 29 |
| 84 ^{''} 425 | 523 ^{''} 897 | 416 ^{''} 683 | - 1025 ^{''} 01 - c | | | | |

The correction + 0^{''}.181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V^* , to the readings for wire V , has been applied in forming the Star's Apparent Zenith Distance, uncorrected, face West.

OBSERVATIONS WITH THE ZENITH TUBE,

OBSERVATIONS OF γ DRACONIS, UNREDUCED.

| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
|---------------------------|------------------------|---------------------------|------------------------------|--|--|---------------------------|-------------------|--------------------|-----------|
| | | | | | | Lower. | Upper. | | |
| Aug. 16 | W | V* | 50 ^r 325 | 100 ^r 221 100 ^r 995 | 99 ^r 550 100 ^r 344 | 66 ^o 2 | 72 ^o 5 | Good. | W R |
| | E | V | 12 ^r 800 | 99 ^r 304 100 ^r 000 | 99 ^r 580 100 ^r 410 | | | | |
| Aug. 20 | W | V* | 50 ^r 534 | 99 ^r 880 100 ^r 646 | 99 ^r 510 100 ^r 407 | 64 ^o 0 | 64 ^o 0 | Very good. | W R |
| | E | V | 12 ^r 987 | 99 ^r 546 100 ^r 275 | 99 ^r 574 100 ^r 385 | | | | |
| Aug. 23 | W | V* | 50 ^r 246 | 100 ^r 250 100 ^r 963 | 99 ^r 533 100 ^r 385 | 65 ^o 5 | 66 ^o 5 | Very good. | W R |
| | E | V | 12 ^r 964 | 99 ^r 184 99 ^r 920 | 99 ^r 550 100 ^r 380 | | | | |
| Aug. 26 | W | V* | 50 ^r 650 | 100 ^r 008 100 ^r 775 | 99 ^r 536 100 ^r 360 | 64 ^o 0 | 72 ^o 0 | Very good. | W R |
| | E | V | 12 ^r 498 | 99 ^r 560 100 ^r 297 | 99 ^r 548 100 ^r 350 | | | | |
| Aug. 31 | W | V* | 50 ^r 618 | 99 ^r 960 100 ^r 853 | 99 ^r 498 100 ^r 375 | 60 ^o 8 | 61 ^o 0 | Clouded and faint. | R |
| | E | V | 12 ^r 726 | 99 ^r 340 100 ^r 212 | 99 ^r 553 100 ^r 442 | | | | |
| Sep. 2 | W | V* | 50 ^r 868 | 99 ^r 700 100 ^r 588 | 99 ^r 530 100 ^r 447 | 63 ^o 0 | 68 ^o 0 | Faint but steady. | R |
| | E | V | 12 ^r 518 | 99 ^r 552 100 ^r 440 | 99 ^r 520 100 ^r 416 | | | | |
| Sep. 3 | W | V* | 50 ^r 865 | 99 ^r 900 100 ^r 685 | 99 ^r 574 100 ^r 402 | 63 ^o 0 | 68 ^o 0 | | W R |
| | E | V | 12 ^r 377 | 99 ^r 610 100 ^r 390 | 99 ^r 540 100 ^r 415 | | | | |
| Sep. 5 | W | V* | 51 ^r 000 | 99 ^r 801 100 ^r 665 | 99 ^r 542 100 ^r 426 | 62 ^o 5 | 65 ^o 3 | Very faint. | R |
| | E | V | 12 ^r 425 | 99 ^r 453 100 ^r 298 | 99 ^r 502 100 ^r 414 | | | | |

One revolution of Grand Micrometer = 6".711
 " of Lower Plumb-line Micrometer = 5".243
 " of Upper Plumb-line Micrometer = 4".168

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 337 ^h 731 | 527 ^h 488 | 416 ^h 579 | + 1281 ^h 98 + c | " | " | " | " |
| 85 ^h 901 | 522 ^h 475 | 416 ^h 779 | - 1025 ^h 16 - c | - 1153 ^h 57 | 128 ^h 41 | - 12 ^h 22 | 116 ^h 19 |
| 339 ^h 134 | 525 ^h 680 | 416 ^h 628 | + 1281 ^h 62 + c | - 1154 ^h 66 | 126 ^h 96 | - 12 ^h 91 | 114 ^h 05 |
| 87 ^h 156 | 523 ^h 828 | 416 ^h 716 | - 1027 ^h 70 - c | | | | |
| 337 ^h 200 | 527 ^h 483 | 416 ^h 628 | + 1281 ^h 49 + c | - 1153 ^h 55 | 127 ^h 94 | - 13 ^h 36 | 114 ^h 58 |
| 87 ^h 002 | 521 ^h 951 | 416 ^h 654 | - 1025 ^h 61 - c | | | | |
| 339 ^h 913 | 526 ^h 355 | 416 ^h 583 | + 1283 ^h 03 + c | - 1153 ^h 71 | 129 ^h 32 | - 13 ^h 81 | 115 ^h 51 |
| 83 ^h 874 | 523 ^h 928 | 416 ^h 587 | - 1024 ^h 39 - c | | | | |
| 339 ^h 698 | 526 ^h 434 | 416 ^h 533 | + 1282 ^h 85 + c | - 1154 ^h 08 | 128 ^h 77 | - 14 ^h 44 | 114 ^h 33 |
| 85 ^h 404 | 523 ^h 125 | 416 ^h 787 | - 1025 ^h 32 - c | | | | |
| 341 ^h 376 | 525 ^h 055 | 416 ^h 753 | + 1283 ^h 37 + c | - 1154 ^h 16 | 129 ^h 21 | - 14 ^h 62 | 114 ^h 59 |
| 84 ^h 009 | 524 ^h 279 | 416 ^h 666 | - 1024 ^h 95 - c | | | | |
| 341 ^h 356 | 525 ^h 837 | 416 ^h 749 | + 1284 ^h 12 + c | - 1154 ^h 10 | 130 ^h 02 | - 14 ^h 71 | 115 ^h 31 |
| 83 ^h 062 | 524 ^h 300 | 416 ^h 708 | - 1024 ^h 07 - c | | | | |
| 342 ^h 261 | 525 ^h 522 | 416 ^h 733 | + 1284 ^h 70 + c | - 1154 ^h 18 | 130 ^h 52 | - 14 ^h 89 | 115 ^h 63 |
| 83 ^h 384 | 523 ^h 649 | 416 ^h 624 | - 1023 ^h 66 - c | | | | |

The correction + 0^h181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance, uncorrected, face West.

OBSERVATIONS WITH THE ZENITH TUBE,

| OBSERVATIONS OF γ DRACONIS, UNREDUCED. | | | | | | | | | |
|---|------------------------|---------------------------|------------------------------|--|--|---------------------------|----------------------|--|-----------|
| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
| | | | | | | Lower. | Upper. | | |
| Sep. 9 | W | V* | 50 ^r .750 | 99 ^r .886 100 ^r .721 | 99 ^r .519 100 ^r .406 | 61 ^o .2 | 63 ^o .0 | Faint. | R |
| | E | V | 12.325 | 99.602 100.446 | 99.545 100.414 | | | | |
| Sep. 13 | W | V* | 51.005 | 99.872 100.695 | 99.516 100.387 | 59.5 | 60.0 | | R |
| | E | V | 12.052 | 99.598 100.413 | 99.552 100.446 | | | | |
| Sep. 15 | W | V* | 50.968 | 99.890 100.758 | 99.498 100.385 | 60.0 | 64.8 | Tremulous. | R |
| | E | V | 12.042 | 99.602 100.436 | 99.546 100.432 | | | | |
| Sep. 21 | W | V* | 50.856 | 100.105 100.945 | 99.470 100.385 | 57.2 | 59.3 | Faint and tremulous. | R |
| | E | V | 12.163 | 99.420 100.238 | 99.546 100.448 | | | | |
| Sep. 28 | W | V* | 50.850 | 100.102 100.958 | 99.488 100.390 | 53.7 | 54.0 | Very faint. | R |
| | E | V | 12.126 | 99.298 100.165 | 99.570 100.458 | | | | |
| Oct. 11 | W | V* | 50.550 | 100.503 101.316 | 99.480 100.413 | 54.0 | 56.0 | Very faint and tremulous. | R |
| | E | V | 12.396 | 99.056 99.960 | 99.502 100.426 | | | | |
| Oct. 19 | W | V* | 50.350 | 100.450 101.347 | 99.487 100.402 | 48.5 | 47.6 | Exceedingly faint: the observation not good. | R |
| | E | V | 12.568 | 99.006 99.856 | 99.548 100.457 | | | | |
| Nov. 28 | W | V* | 49.085 | 100.556 101.423 | 99.508 100.420 | 46.5 | 48.5 | Faint. | R |
| | E | V | 14.112 | 98.998 99.835 | 99.518 100.442 | | | | |
| One revolution of Grand Micrometer | | | | | | = | 6 ^{''} .711 | | |
| ,, of Lower Plumb-line Micrometer | | | | | | = | 5 ^{''} .243 | | |
| ,, of Upper Plumb-line Micrometer | | | | | | = | 4 ^{''} .168 | | |
| Sep. 28, Face W. The reading of the Grand Micrometer was set down 51 ^r .850. | | | | | | | | | |
| Nov. 1. The speculum of the grand micrometer eye-piece was taken off and cleaned, as well as the eye-piece generally. | | | | | | | | | |

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 340 ^h 584 | 525 ^h 894 | 416 ^h 646 | + 1283 ^h 31 + c | " | " | " | " |
| 82 ^h 713 | 524 ^h 426 | 416 ^h 716 | - 1023 ^h 86 - c | - 1153 ^h 58 | 129 ^h 73 | - 15 ^h 21 | 114 ^h 52 |
| 342 ^h 295 | 525 ^h 784 | 416 ^h 599 | + 1284 ^h 86 + c | | | | |
| 80 ^h 881 | 524 ^h 331 | 416 ^h 796 | - 1022 ^h 01 - c | - 1153 ^h 43 | 131 ^h 43 | - 15 ^h 41 | 116 ^h 02 |
| 342 ^h 047 | 525 ^h 999 | 416 ^h 558 | + 1284 ^h 79 + c | | | | |
| 80 ^h 813 | 524 ^h 399 | 416 ^h 753 | - 1021 ^h 97 - c | - 1153 ^h 38 | 131 ^h 41 | - 15 ^h 51 | 115 ^h 90 |
| 341 ^h 295 | 527 ^h 053 | 416 ^h 499 | + 1285 ^h 03 + c | | | | |
| 81 ^h 626 | 523 ^h 403 | 416 ^h 787 | - 1021 ^h 82 - c | - 1153 ^h 42 | 131 ^h 61 | - 15 ^h 66 | 115 ^h 95 |
| 341 ^h 255 | 527 ^h 079 | 416 ^h 545 | + 1285 ^h 06 + c | | | | |
| 81 ^h 377 | 522 ^h 894 | 416 ^h 859 | - 1021 ^h 13 - c | - 1153 ^h 09 | 131 ^h 97 | - 15 ^h 66 | 116 ^h 31 |
| 339 ^h 242 | 529 ^h 071 | 416 ^h 579 | + 1285 ^h 07 + c | | | | |
| 83 ^h 189 | 521 ^h 721 | 416 ^h 650 | - 1021 ^h 56 - c | - 1153 ^h 32 | 131 ^h 75 | - 14 ^h 76 | 116 ^h 99 |
| 337 ^h 899 | 529 ^h 014 | 416 ^h 571 | + 1283 ^h 67 + c | | | | |
| 84 ^h 345 | 521 ^h 316 | 416 ^h 813 | - 1022 ^h 47 - c | - 1153 ^h 07 | 130 ^h 60 | - 13 ^h 90 | 116 ^h 70 |
| 329 ^h 410 | 529 ^h 491 | 416 ^h 650 | + 1275 ^h 73 + c | | | | |
| 94 ^h 705 | 521 ^h 243 | 416 ^h 716 | - 1032 ^h 66 - c | - 1154 ^h 20 | 121 ^h 53 | - 4 ^h 95 | 116 ^h 58 |

The correction + 0^h.181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance uncorrected, face West.

| OBSERVATIONS OF γ DRACONIS, UNREDUCED. | | | | | | | | | |
|---|------------------------|---------------------------|------------------------------|--|--|---------------------------|--------|---------------------------------------|-----------|
| Day of Observation, 1842. | Position of Eye-piece. | Wire of Grand Micrometer. | Reading of Grand Micrometer. | Reading of lower Plumb-line Micrometer at contact with Plumb-line. | Reading of upper Plumb-line Micrometer at contact with Plumb-line. | Readings of Thermometers. | | Remarks. | Observer. |
| | | | | | | Lower. | Upper. | | |
| Dec. 13 | W | V* | 48·304 | 100·470 101·270 | 99·510 100·410 | 47·0 | 54·0 | Very faint. | W R |
| | E | V | 14·886 | 98·890 99·796 | 99·540 100·406 | | | | |
| Dec. 14 | W | V* | 48·100 | 100·482 101·410 | 99·480 100·403 | 47·0 | 51·0 | Very faint and exceedingly tremulous. | R |
| | E | V | 14·716 | 98·926 99·830 | 99·526 100·450 | | | | |
| Dec. 15 | W | V* | 48·083 | 100·550 101·420 | 99·472 100·424 | 48·2 | 50·4 | Very tremulous. | R |
| | E | V | 15·038 | 98·876 99·738 | 99·565 100·478 | | | | |
| Dec. 21 | W | V* | 47·845 | 100·406 101·248 | 99·516 100·447 | 48·6 | 51·0 | Very faint and tremulous. | R |
| | E | V | 15·326 | 98·875 99·726 | 99·502 100·446 | | | | |
| Dec. 27 | W | V* | 47·520 | 100·512 101·365 | 99·480 100·418 | 43·0 | 40·3 | Faint. | R |
| | E | V | 15·682 | 98·925 99·765 | 99·512 100·460 | | | | |
| One revolution of Grand Micrometer | | | | | | = | 6"·711 | | |
| " of Lower Plumb-line Micrometer | | | | | | = | 5"·243 | | |
| " of Upper Plumb-line Micrometer | | | | | | = | 4"·168 | | |

REDUCTION of the OBSERVATIONS.

| Equivalent in arc, for reading of Grand Micrometer. | Equivalent in arc, for reading of lower Plumb-line Micrometer. | Equivalent in arc, for reading of upper Plumb-line Micrometer. | Star's apparent Zen. Dist. N. from the Observation, uncorrected. | Value of c from each double Observation. | Star's apparent Zenith Distance North from the Observation, corrected. | Correction to Mean Zenith Distance North, Jan. 1, 1842. | Mean Zenith Distance North, Jan. 1, 1842. |
|---|--|--|--|--|--|---|---|
| 324 ^{''} ·168 | 528 ^{''} ·861 | 416 ^{''} ·633 | + 1269 ^{''} ·84 + c | " | " | " | " |
| 99·900 | 520·856 | 416·688 | - 1037·44 - c | - 1153·64 | 116·20 | - 0·19 | 116·02 |
| 322·799 | 529·260 | 416·558 | + 1268·80 + c | - 1152·67 | 116·13 | + 0·15 | 116·28 |
| 98·759 | 521·039 | 416·749 | - 1036·55 - c | - 1153·70 | 115·21 | + 0·48 | 115·69 |
| 322·685 | 529·464 | 416·583 | + 1268·91 + c | - 1153·40 | 113·23 | + 2·66 | 115·89 |
| 100·920 | 520·667 | 416·891 | - 1038·48 - c | - 1153·87 | 111·03 | + 4·94 | 115·97 |
| 321·088 | 528·636 | 416·724 | + 1266·63 + c | | | | |
| 102·852 | 520·630 | 416·692 | - 1040·17 - c | | | | |
| 318·907 | 529·223 | 416·587 | + 1264·90 + c | | | | |
| 105·242 | 520·866 | 416·741 | - 1042·85 - c | | | | |

The correction + 0^{''}·181, to reduce the readings of the Grand Micrometer for the bisections of the star, face West, with wire V*, to the readings for wire V, has been applied in forming the Star's Apparent Zenith Distance uncorrected, face West.

1844COAR.M...4C...35A