

CRPL-F 243 PART B

FOR OFFICIAL USE

PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
NOVEMBER 1964

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

SOLAR - GEOPHYSICAL DATA

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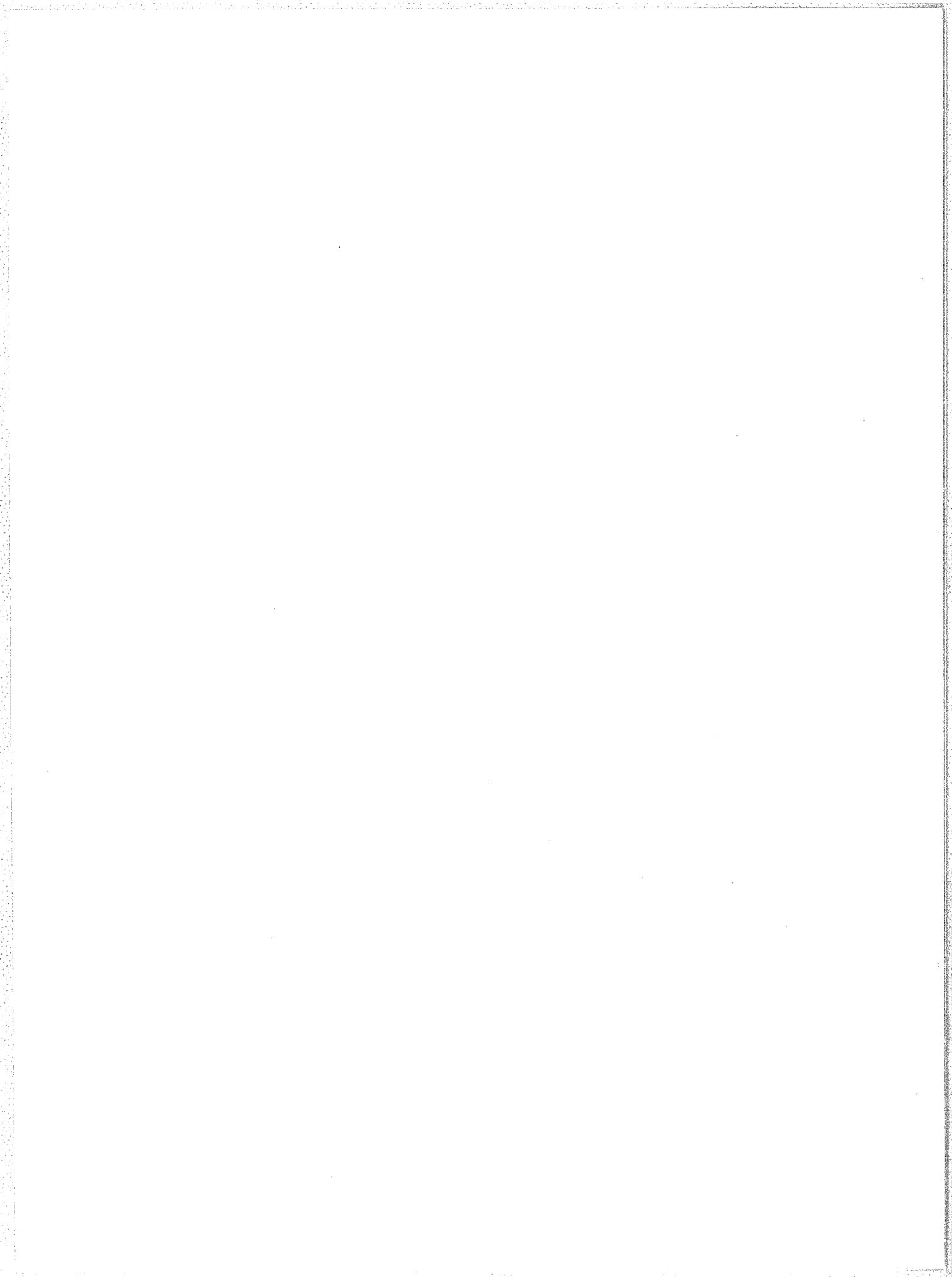
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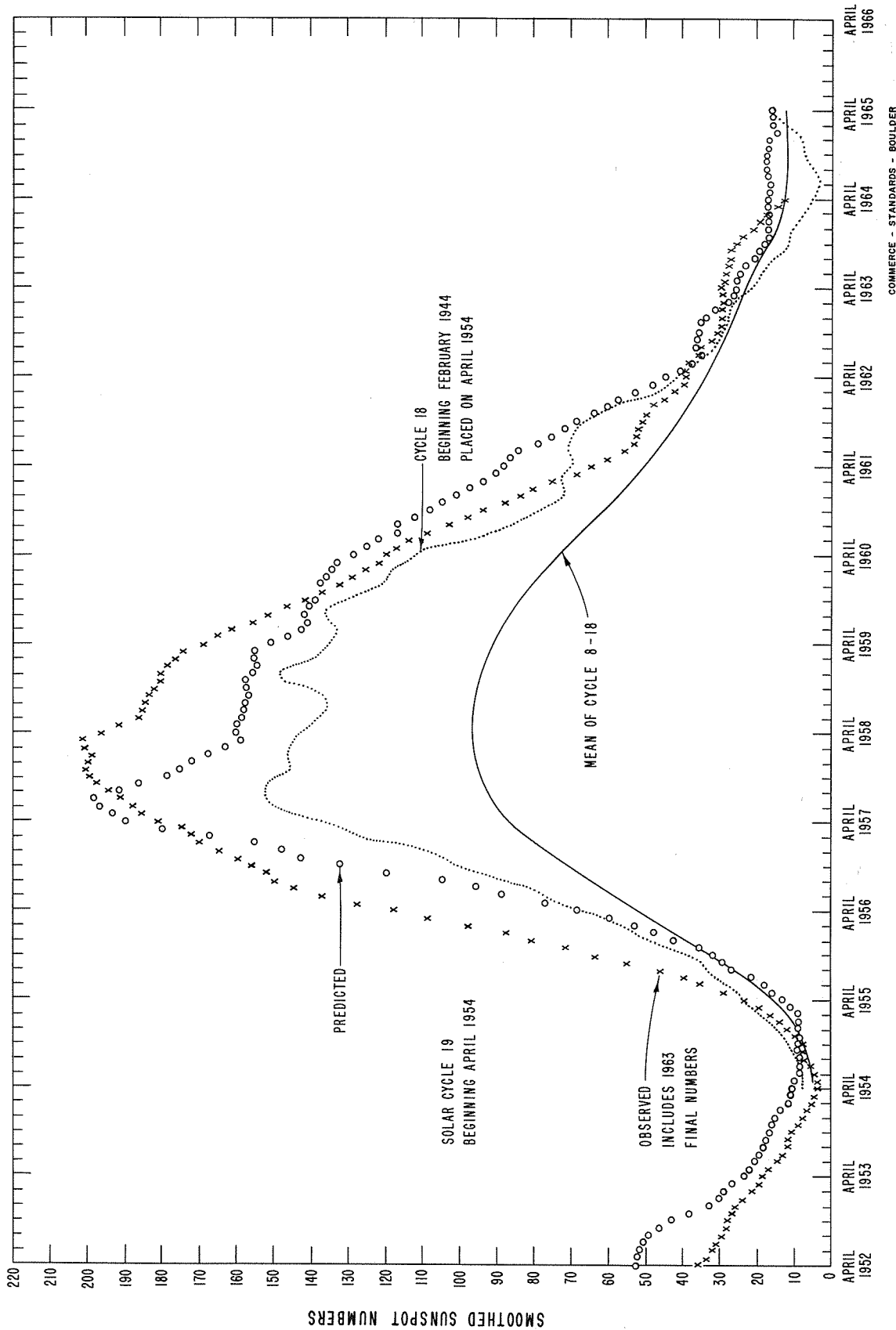


The descriptive text has been republished this month, November, 1964.

DAILY SOLAR INDICES

| Sep. 1964 | American Relative Sunspot Numbers RA' |
|--------------|---|
| 1 | 6 |
| 2 | 7 |
| 3 | 3 |
| 4 | 0 |
| 5 | 0 |
| 6 | 0 |
| 7 | 1 |
| 8 | 3 |
| 9 | 5 |
| 10 | 9 |
| 11 | 9 |
| 12 | 5 |
| 13 | 9 |
| 14 | 4 |
| 15 | 0 |
| 16 | 0 |
| 17 | 0 |
| 18 | 0 |
| 19 | 0 |
| 20 | 0 |
| 21 | 0 |
| 22 | 0 |
| 23 | 0 |
| 24 | 0 |
| 25 | 0 |
| 26 | 0 |
| 27 | 0 |
| 28 | 0 |
| 29 | 1 |
| 30 | 1 |
| Mean: | 2.1 |

| Oct. 1964 | Zürich Provisional Relative Sunspot Numbers R _Z | Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux | |
|--------------|---|--|----------------|
| | | S | S _A |
| 1 | 16 | 71.9 | 72.0 |
| 2 | 11 | 71.5 | 71.6 |
| 3 | 0 | 71.7 | 71.8 |
| 4 | 0 | 70.8 | 70.8 |
| 5 | 0 | 71.6 | 71.6 |
| 6 | 14 | 72.7 | 72.6 |
| 7 | 20 | 74.1 | 74.0 |
| 8 | 16 | 77.0 | 76.8 |
| 9 | 11 | 73.1 | 72.9 |
| 10 | 0 | 72.9 | 72.7 |
| 11 | 0 | 71.8 | 71.5 |
| 12 | 0 | 70.0 | 69.7 |
| 13 | 0 | 72.3 | 71.9 |
| 14 | 0 | 70.6 | 70.3 |
| 15 | 0 | 70.6 | 70.2 |
| 16 | 0 | 71.0 | 70.5 |
| 17 | 0 | 70.9 | 70.4 |
| 18 | 12 | 72.4 | 71.8 |
| 19 | 11 | 72.8 | 72.2 |
| 20 | 10 | 72.6 | 71.9 |
| 21 | 0 | 70.9 | 70.3 |
| 22 | 0 | 72.5 | 71.8 |
| 23 | 0 | 73.0 | 72.3 |
| 24 | 7 | 73.8 | 73.0 |
| 25 | 8 | 76.3 | 75.4 |
| 26 | 7 | 76.4 | 75.4 |
| 27 | 8 | 75.8 | 74.9 |
| 28 | 0 | 74.5 | 73.5 |
| 29 | 0 | 74.3 | 73.2 |
| 30 | 16 | 74.2 | 73.2 |
| 31 | 7 | 75.1 | 74.0 |
| Mean: | 5.6 | 72.9 | 72.4 |



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

OCTOBER 1964

| Oct. 1964 | LAT. | MCMATH PLAGE NUMBER | RETURN OF REGION | CALCIUM PLAGE DATA | | | | | | SUNSPOT DATA | | |
|--------------|------|---------------------------|------------------------|--------------------|-------|---------|-------------------------|---------------------------|-----------------------------|--------------|-------|---------|
| | | | | CMP VALUES | | HISTORY | AGE (ROTA- TIONS) | DATE FIRST SEEN (1) | DURA- TION (DAYS) (2) | CMP VALUES | | HISTORY |
| | | | | AREA | INT. | | | | | AREA | COUNT | |
| 1.7 | S05 | 7506 (2) | New | 100 | 1 | b - d | 1 | Sept.30 | 1 | | | |
| 2.1 | N32 | 7510 (2) | New | 200 | 1 | b - d | 1 | Oct. 2 | 1 | | | |
| 3.8 | N25 | 7512 (3) | New | 300 | 2 | b / l | 1 | Oct. 4 | >4 | (180) | (3) | b - l |
| 4.3 | S22 | 7507 | New | (100) | (1.5) | b - d | 1 | Sept.30 | 2 | | | |
| 4.7 | N38 | 7500 (4) | New | 700 | 3 | l \ l | 1 | Sept.27 | 14 | | | |
| 4.8 | N27 | 7511 (2) | New | 300 | 1.5 | b - d | 1 | Oct. 2 | 1 | | | |
| 6.0 | S12 | 7514 | New | 400 | 2.5 | b - d | 1 | Oct. 7 | 4 | (20) | (4) | b - d |
| 6.0 | N41 | 7503 | 7470 | 900 | 2.5 | l \ l | 2 | Sept.29 | 13 | | | |
| 6.8 | N08 | 7513 (2) | New | (200) | (1) | b - d | 1 | Oct. 4 | 1 | | | |
| 7.4 | S10 | 7509 | New | 600 | 2 | l \ l | 1 | Oct. 1 | ≥11 | | | |
| 9.8 | S01 | 7520 (2) | New | (100) | (2) | b - d | 1 | Oct. 13 | 1 | | | |
| 10.7 | N02 | 7516 (2) | New | 100 | 1 | b - d | 1 | Oct. 10 | 1 | | | |
| 11.6 | N02 | 7526 | New | (200) | (2.5) | b - l | 1 | Oct. 17 | 1 | | | |
| 12.6 | N28 | 7515 (2) | New | (200) | (1) | b - d | 1 | Oct. 7 | 1 | | | |
| 12.8 | N11 | 7527 (2) | New | (200) | (1.5) | b - d | 1 | Oct. 17 | 1 | | | |
| 13.6 | N42 | 7522 (2) | New | (100) | (1) | b - d | 1 | Oct. 16 | 1 | | | |
| 14.5 | S10 | 7517 (2) | New | (200) | (2) | b - d | 1 | Oct. 10 | 1 | | | |
| 14.9 | S26 | 7523 (2) | New | (100) | (1) | b - d | 1 | Oct. 16 | 1 | | | |
| 15.0 | N52 | 7518 (2) | New | (200) | (1.5) | l - d | 1 | Oct. 10 | 1 | | | |
| 16.3 | N09 | 7528 (2) | New | 100 | 1.5 | b - d | 1 | Oct. 17 | 1 | | | |
| 16.9 | N29 | 7519 | New | (100) | (2) | l \ d | 1 | Oct. 11 | 4 | 122 | 4 | b - d |
| 18.0 | S35 | 7524 (2) | New | 100 | 1 | b - d | 1 | Oct. 16 | 1 | | | |
| 18.3 | N29 | 7531 | New | 400 | 3 | b - l | 1 | Oct. 18 | 7 | | | |
| 18.4 | N36 | 7529 | New | 200 | 1.5 | b - d | 1 | Oct. 17 | 3 | | | |
| 18.7 | N08 | 7521 (5) | New | 1000 | 2.5 | l - l | 1 | Oct. 13 | 12 | | | |
| 19.8 | N22 | 7525 | New | (400) | (1) | b - d | 1 | Oct. 16 | 2 | | | |
| 21.0 | N17 | 7534 (2) | New | (100) | (1.5) | b - d | 1 | Oct. 23 | 1 | | | |
| 21.9 | S09 | 7536 | New | (300) | (2) | b - d | 1 | Oct. 24 | 2 | | | |
| 22.6 | N06 | 7542 (2) | New | (100) | (1.5) | b - d | 1 | Oct. 26 | 1 | | | |
| 22.8 | N03 | 7530 (2) | New | (200) | (2) | l - d | 1 | Oct. 17 | 1 | | | |
| 22.8 | N56 | 7532 (2) | New | (100) | (1.5) | b - d | 1 | Oct. 18 | 1 | | | |
| 23.7 | N08 | 7544 | New | (300) | (1) | b \ l | 1 | Oct. 27 | 2 | | | |
| 24.3 | S07 | 7547 (2) | New | (100) | (1) | b - d | 1 | Oct. 28 | 1 | | | |
| 24.7 | S10 | 7539 (2) | New | 200 | 1.5 | b - d | 1 | Oct. 25 | 1 | | | |
| 25.3 | N23 | 7540 (2) | New | 100 | 2 | b - d | 1 | Oct. 25 | 1 | | | |
| 25.3 | N28 | 7535 (2) | New | 300 | 1 | b - d | 1 | Oct. 23 | 1 | | | |
| 25.3 | N13 | 7541 (2) | New | 100 | 1 | b - d | 1 | Oct. 25 | 1 | | | |
| 26.1 | N15 | 7551 | New | (200) | (2) | b - l | 1 | Oct. 30 | 2 | | | |
| 26.4 | S07 | 7533 | 7508 | 1300 | 2.5 | l - l | 2 | Oct. 21 | >11 | 10 | 4 | b - d |
| 26.6 | N02 | 7543 (2) | New | 100 | 1 | b - d | 1 | Oct. 26 | 1 | | | |
| 27.7 | S17 | 7545 (2) | New | 300 | 1.5 | b - d | 1 | Oct. 27 | 1 | | | |
| 27.8 | N21 | 7546 | New | 200 | 1 | b \ d | 1 | Oct. 27 | 4 | | | |
| 27.8 | S24 | 7555 | New | (200) | (1.5) | b - d | 1 | Oct. 31 | 2 | | | |
| 28.9 | S01 | 7537 (2) | New | (200) | (1) | b - d | 1 | Oct. 24 | 1 | | | |
| 29.4 | N21 | 7552 | New | 300 | 2 | b - l | 1 | Oct. 30 | 5 | | | |
| 30.1 | S12 | 7548 | New | 300 | 2 | b \ d | 1 | Oct. 28 | 4 | 10 | 2 | b - d |
| 30.7 | S28 | 7556 (2) | New | 100 | 1.5 | b - d | 1 | Oct. 31 | 1 | | | |
| 31.0 | N26 | 7538 | 7512 | 2400 | 3 | l \ l | 1 | Oct. 24 | 14 | 10 | 1 | b - d |
| 31.0 | N33 | 7560 | New | (200) | (3) | b - d | 1 | Nov. 3 | 2 | | | |
| 31.9 | S20 | 7549 (2) | New | (100) | (1.5) | b - d | 1 | Oct. 28 | 1 | | | |

COMMERCE - STANDARDS - BOULDER

- (1) No calcium plage observations were secured at the McMath-Hulbert Observatory on October 8, 9, 12, 15, 20, 1964.
- (2) These very small and ephemeral plages last for only one day.
- (3) Plage 7512 is new, in the same position as ephemeral plage 7468.
- (4) Plage 7500 is near the position of plage 7470 of the previous rotation.
- (5) Plage 7521 is new, in the same position as ephemeral plage 7407.

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS IIB

OCTOBER 1964

| Oct. 1964 | TIME MEAS. UT | LAT. | MER. DIST. | TYPE | Oct. 1964 | TIME MEAS. UT | LAT. | MER. DIST. | TYPE |
|-----------|---------------|------------|------------|-------------------------------|-----------|---------------|------|------------|--------------|
| 1 | 2250 | N23 S08 | W68 W30 | αf^* βf | 17 | 1710 | N04 | W76 | αp |
| 2 | 1810 | S06 | W43 | βf | 18 | 1630 | N28 | W04 | $\beta *$ |
| 3 | No Spots | | | | 19 | 1620 | N29 | W17 | βp^* |
| 4 | 1935 | N25 | W14 | $\beta *$ | 20 | 1740 | N30 | W28 | αf^* |
| 5 | 1740 | N24 | W28 | β | 21 | No Obs | | | |
| 6 | 1730 | N23 | W43 | βp^* | 22-23-24 | No Spots | | | |
| 7 | 2245 | N24 S13 | W59 W13 | $\beta \gamma^*$ $\beta *$ | 25 | 1840 | N24 | E67 | αp^* |
| 8 | 2340 | N25 | W71 | βf^* | 26-27 | No Spots | | | |
| 9 | No Obs | | | | 28-29 | No Obs | | | |
| 10-16 | No Spots | | | | 30 | No Spots | | | |
| | | | | | 31 | 1915 | N08 | E17 | βf |

COMMERCE - STANDARDS - BOULDER

* New Cycle.

Erratum: In CRPL-F 240 B for August 1964, the Mt. Wilson sunspot data published on page IIB, the longitude of the spot group for July 1 measured at 1450 U.T. should have been E37 instead of W37.

FINAL CORONAL LINE EMISSION INDICES

JULY 1964

| CMP July 1964 | North East Quadrant (observed 7 days earlier) | | | South East Quadrant (observed 7 days earlier) | | | South West Quadrant (observed 7 days later) | | | North West Quadrant (observed 7 days later) | | |
|---------------------|--|----------------|----------------|--|----------------|----------------|--|----------------|----------------|--|----------------|----------------|
| | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ |
| 1 | 6 | 8 | 26 | 14 | 16 | 18 | 19 | 22 | x | 25 | 26 | x |
| 2 | 26 | 29 | x | 16 | 18 | x | x | x | 12a | x | x | 13a |
| 3 | 14 | 18 | 11 | 10 | 12 | 12 | x | x | x | x | x | x |
| 4 | x | x | x | x | x | x | x | x | 13a | x | x | 13a |
| 5 | x | x | 14 | x | x | 11 | 6 | 8 | 5 | 17 | 20 | 2 |
| 6 | 26 | 29 | x | 14 | 15 | x | 2 | 11 | 14 | 9 | 17 | 12 |
| 7 | 29 | 39 | 17 | 12 | 13 | 16 | 4 | 7 | 15 | 16 | 19 | 18 |
| 8 | 23 | 50 | 26 | 4 | 9 | 19 | 12 | 14 | 9 | 22 | 27 | 10 |
| 9 | 27 | 58 | 39 | 11 | 13 | 12 | 14 | 22 | 11 | 8 | 11 | 11 |
| 10 | 43 | 60 | 32 | 13 | 19 | 23 | 22 | 26 | 19 | 64 | 78 | 15 |
| 11 | x | x | x | x | x | x | 11 | 13 | 14 | 14 | 20 | 11 |
| 12 | x | x | 9 | x | x | 8 | x | x | 13 | x | x | 13 |
| 13 | 20 | 0 | 0 | 6 | 8 | 0 | 16 | 19 | x | 29 | 37 | x |
| 14 | 14 | 16 | 11 | 13 | 7 | 8 | 6 | 8 | 12 | 6 | 8 | 16 |
| 15 | 30 | 34 | x | 18 | 20 | x | 14 | 15 | 8 | 15 | 16 | 8 |
| 16 | x | x | 13a | x | x | 10a | 10 | 12 | 2 | 11 | 13 | 4 |
| 17 | x | x | x | x | x | x | 14 | 17 | 2 | 23 | 43 | 6 |
| 18 | 2 | 6 | 28a | 5 | 6 | 18a | 3 | 6 | 15 | 7 | 8 | 23 |
| 19 | 13 | 16 | 16 | 11 | 14 | 13 | 13 | 19 | 15 | 13 | 17 | 19 |
| 20 | 5 | 8 | 26 | 8 | 9 | 14 | 12 | 13 | 2 | 15 | 17 | 0 |
| 21 | 13 | 17 | 17 | 6 | 7 | 14 | 15 | 17 | 6 | 15 | 22 | 0 |
| 22 | 19 | 26 | 11 | 15 | 16 | 12 | 5 | 6 | 15 | 6 | 8 | 13 |
| 23 | 7 | 14 | 10 | 1 | 6 | 17 | 12 | 14 | 15 | 14 | 17 | 10 |
| 24 | 31 | 40 | 9 | 19 | 23 | 10 | x | x | x | x | x | x |
| 25 | 12 | 31 | 14 | 3 | 6 | 12 | 7 | 8 | 8 | 12 | 14 | 8 |
| 26 | x | x | 15 | x | x | 24 | 12 | 14 | 13 | 3 | 3 | 9 |
| 27 | 29 | 33 | x | 11 | 13 | x | 6 | 8 | 4 | 9 | 13 | 5 |
| 28 | 8 | 10 | 28 | 5 | 7 | 20 | 7 | 10 | 4 | 14 | 20 | 16 |
| 29 | 16 | 17 | 8 | 15 | 17 | 10 | 11 | 16 | 17a | 6 | 8 | 17a |
| 30 | 17 | 20 | 4 | 12 | 14 | 3 | 9 | 27 | 12 | 31 | 65 | 20 |
| 31 | 24 | 43 | 8 | 17 | 19 | 0 | 11 | 12 | 11 | 30 | 65 | 16 |

x = no observations * = yellow line emission a = index computed from low weight data

CONFERENCE - STANFORD - BOULDER

FINAL CORONAL LINE EMISSION INDICES

AUGUST 1964

| CMP Aug 1964 | North East Quadrant (observed 7 days earlier) | | | | South East Quadrant (observed 7 days earlier) | | | | South West Quadrant (observed 7 days later) | | | | North West Quadrant (observed 7 days later) | | | |
|--------------------|--|----------------|----------------|-----------------|--|----------------|-----------------|-----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|
| | G ₆ | G ₁ | R ₆ | R ₁ | G ₆ | G ₁ | R ₆ | R ₁ | G ₆ | G ₁ | R ₆ | R ₁ | G ₆ | G ₁ | R ₆ | R ₁ |
| 1 | 7 | 11 | 13 | 18 | 0 | 0 | 18 | 22 | 12 | 15 | 17 | 23 | 27 | 33 | 14 | 16 |
| 2 | 7 | 9 | 13 | 17 | 4 | 6 | 15 | 16 | 12 | 15 | 1 | 5 | 16 | 19 | 1 | 4 |
| 3 | 17 | 25 | 9 | 18 | 12 | 15 | 1 | 5 | 0 | 0 | 19 | 26 | 5 | 6 | 21 | 26 |
| 4 | 18 | 22 | 11 | 21 | 16 | 18 | 13 | 22 | 8 | 9 | 7 | 12 | 11 | 15 | 8 | 11 |
| 5 | 9 | 14 | 17 | 22 | 5 | 8 | 15 | 18 | 9 | 11 | x | x | 21 | 29 | x | x |
| 6 | 16 | 17 | 13 | 21 | 12 | 16 | 13 | 19 | x | x | x | x | x | x | x | x |
| 7 | x | x | x | x | x | x | x | x | 12 | 14 | x | x | 16 | 20 | x | x |
| 8 | 29 | 48 | 10 | 12 | 11 | 13 | 10 | 11 | 11 | 13 | 5 | 7 | 21 | 23 | 5 | 6 |
| 9 | 6 | 12 | 12 | 12 | 3 | 4 | 9 | 12 | 9 | 10 | 7 | 9 | 37 | 64 | 9 | 11 |
| 10 | 20 | 37 | 4 | 7 | 8 | 10 | 4 | 11 | 15 | 19 | x | x | 57 | 91 | x | x |
| 11 | 14 | 18 | 6 | 12 | 8 | 10 | 4 | 11 | x | x | x | x | x | x | x | x |
| 12 | 9 | 12 | 6 ^a | 12 ^e | 6 | 8 | 18 ^a | 26 ^a | 8 | 9 | x | x | 33 | 42 | x | x |
| 13 | 25 | 45 | 15 | 20 | 17 | 36 | 17 | 28 | 6 | 8 | 9 | 13 | 20 | 29 | 15 | 18 |
| 14 | 23 | 60 | 12 | 26 | 8 | 10 | 11 | 13 | 4 | 6 | 6 | 8 | 4 | 7 | 12 | 16 |
| 15 | 19 | 27 | 15 | 16 | 12 | 14 | 18 | 22 | x | x | 5 | 8 | x | x | 4 | 7 |
| 16 | 20 | 31 | 2 | 4 | 11 | 14 | 3 | 5 | x | x | x | x | x | x | x | x |
| 17 | 3 | 17 | 19 | 31 | 1 | 6 | 14 | 21 | 6 | 7 | 17 | 22 | 24 | 44 | 16 | 20 |
| 18 | 9 | 11 | 10 | 12 | 9 | 11 | 8 | 11 | 19 | 23 | 17 | 23 | 21 | 23 | 14 | 21 |
| 19 | 18 | 22 | x | x | 7 | 11 | x | x | 6 | 7 | 17 | 24 | 9 | 12 | 14 | 20 |
| 20 | x | x | x | x | x | x | x | x | 11 | 14 | 13 | 19 | 16 | 23 | 12 | 14 |
| 21 | 13 | 16 | x | x | 13 | 14 | x | x | 8 | 9 | 12 | 16 | 12 | 13 | 10 | 14 |
| 22 | 8 | 15 | 7 | 9 | 9 | 11 | 7 | 8 | 6 | 8 | 10 | 13 | 4 | 11 | 10 | 12 |
| 23 | 10 | 14 | 8 | 11 | 11 | 13 | 6 | 9 | 9 | 16 | 17 | 23 | 4 | 10 | 17 | 23 |
| 24 | 29 | 56 | x | x | 16 | 18 | x | x | 12 | 16 | 13 | 16 | 19 | 24 | 9 | 11 |
| 25 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 26 | 29 | 60 | x | x | 10 | 29 | x | x | x | x | x | x | x | x | x | x |
| 27 | 20 | 34 | 13 | 21 | 6 | 9 | 8 | 10 | x | x | x | x | x | x | x | x |
| 28 | 6 | 8 | 10 | 12 | 4 | 5 | 9 | 16 | x | x | 12 | 16 | x | x | 12 | 14 |
| 29 | x | x | x | x | x | x | x | x | 0 | 0 | x | x | 2 | 8 | x | x |
| 30 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 31 | 14 | 16 | 15 | 21 | 11 | 28 | 12 | 23 | 1 | 3 | x | x | 0 | 0 | x | x |

x = no observations

* = yellow line emission

a = index computed from low weight data

CONFERENCE - STANDARDS - BOSTON

FINAL CORONAL LINE EMISSION INDICES

SEPTEMBER 1964

| CMP Sep 1964 | North East Quadrant (observed 7 days earlier) | | | South East Quadrant (observed 7 days earlier) | | | South West Quadrant (observed 7 days later) | | | North West Quadrant (observed 7 days later) | | |
|--------------------|--|----------------|----------------|--|----------------|----------------|--|----------------|----------------|--|----------------|----------------|
| | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ |
| 1 | 20 | 28 | 22 | 8 | 9 | 32 | 9 | 13 | 28 | 14 | 20 | 38 |
| 2 | 20 | 26 | 14 | 6 | 8 | 18 | 6 | 13 | 20 | 5 | 8 | 30 |
| 3 | 20 | 24 | 11 | 12 | 15 | 18 | 5 | 6 | 19 | 4 | 5 | 21 |
| 4 | 25 | 32 | 12 | 9 | 15 | 15 | 4 | 17 | 28a | 3 | 17 | 26a |
| 5 | 14 | 32 | 19 | 3 | 18 | 18 | 0 | 0 | 26 | 26 | 53 | 43 |
| 6 | 34 | 71 | 18 | 6 | 11 | 19 | 0 | 0 | 15 | 50 | 102 | 46 |
| 7 | 57 | 91 | 23 | 11 | 12 | 29 | x | x | x | x | x | x |
| 8 | x | x | x | x | x | x | 6 | 7 | 28 | 14 | 18 | 33 |
| 9 | 15a | 28a | x | Oa | Oa | x | 1 | 6 | 20 | 10 | 17 | 26 |
| 10 | 1a | 6a | 15a | Oa | Oa | 12a | 0 | 0 | 24 | 17 | 45 | 20 |
| 11 | x | 13 | 22 | x | x | 13 | 4 | 6 | 28 | 10 | 13 | 24 |
| 12 | 12 | 34 | x | 0 | 0 | x | 0 | 0 | 23 | 9 | 14 | 10 |
| 13 | x | x | x | x | x | x | 3 | 17 | x | 8 | 8 | x |
| 14 | 6 | 25 | 18 | 0 | 0 | 18 | 9 | 12 | 21 | 21 | 26 | 23 |
| 15 | 11 | 24 | 35 | 8 | 13 | 24 | 10 | 11 | 12 | 22 | 25 | 8 |
| 16 | 6 | 9 | 17 | 4 | 5 | 18 | 7 | 10 | 10 | 12 | 16 | 18 |
| 17 | 4 | 4 | 20 | 4 | 4 | 15 | 11 | 17 | 18 | 8 | 13 | 14 |
| 18 | 0 | 0 | 24a | 0 | 0 | 18a | 14 | 21 | 9 | 13 | 18 | 16 |
| 19 | 0 | 0 | 20 | 0 | 0 | 24 | x | x | x | x | x | x |
| 20 | 0 | 0 | 22 | 0 | 0 | 16 | 3 | 4 | x | 4 | 4 | x |
| 21 | x | x | x | x | x | 16 | 3 | 4 | x | 2 | 5 | 12 |
| 22 | 10 | 12 | 20 | 13 | 18 | x | 7 | 9 | 16 | 8 | 10 | 19 |
| 23 | 0 | 0 | 30 | 3 | 8 | 16 | 10 | 15 | x | 10 | 17 | x |
| 24 | 1 | 3 | 21 | 1 | 3 | 14 | x | x | x | x | x | x |
| 25 | 6 | 7 | 24 | 3 | 6 | 25 | 2a | 11a | 22 | Oa | Oa | 22 |
| 26 | 16 | 36 | 9 | 0 | 0 | 9 | 8a | 43a | 24 | Oa | Oa | 24 |
| 27 | 6 | 8 | x | 0 | 0 | x | 2 | 8 | 14 | 0 | 0 | 20 |
| 28 | 13 | 16 | 20 | 12 | 16 | 25 | x | x | x | x | x | x |
| 29 | 19 | 42 | 9 | 13 | 16 | 9 | 20 | 64 | 26 | 4 | 8 | 28 |
| 30 | 13 | 15 | 13 | 10 | 12 | 12 | x | x | x | x | x | x |

x = no observations

* = yellow line emission

a = index computed from low weight data

CONTINUED - STRAUBER - BOUTER

PROVISIONAL CORONAL LINE EMISSION INDICES

OCTOBER 1964

| CMP Oct 1964 | North East Quadrant (observed 7 days earlier) | | | | South East Quadrant (observed 7 days earlier) | | | | South West Quadrant (observed 7 days later) | | | | North West Quadrant (observed 7 days later) | | | |
|--------------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|
| | G ₆ | G ₁ | R ₆ | R ₁ | G ₆ | G ₁ | R ₆ | R ₁ | G ₆ | G ₁ | R ₆ | R ₁ | G ₆ | G ₁ | R ₆ | R ₁ |
| 1 | x | x | 11 | 15 | x | x | 11 | 14 | x | 6 | x | x | x | x | x | x |
| 2 | x | x | x | x | x | 6 | x | x | 5 | 11 | 13 | 18 | 13 | 26 | 13 | 20 |
| 3 | 31 | 55 | x | x | x | 4 | x | x | 9 | x | 19 | 31 | 17 | 52 | 17 | 28 |
| 4 | 35 | 66 | x | x | x | 3 | x | x | x | x | x | x | x | x | x | x |
| 5 | 16 | 27 | 17 | 23 | 2 | 3 | 8 | 12 | 5 | 8 | x | x | 48 | 84 | x | x |
| 6 | 28 | 36 | 10 | 14 | 9 | 12 | 16 | 25 | 8 | 9 | 15 | 20 | 25 | 51 | 16 | 36 |
| 7 | x | x | x | x | x | x | x | x | 3 | 11 | 26 | 29 | 24 | 45 | x | x |
| 8 | x | x | 18 | 25 | x | x | 17 | 22 | 0 | 0 | 10 | 12 | 0 | 0 | 9 | 12 |
| 9 | 5a | 17a | 10 | 12 | Oa | Oa | 10 | 12 | Oa | Oa | x | x | 7a | 14a | x | x |
| 10 | 7a | 11a | 11 | 13 | Oa | Oa | 11 | 15 | 4a | 4a | 13 | 20 | 7a | 9a | 12 | 14 |
| 11 | 4 | 11 | x | x | 1 | 8 | x | x | x | x | x | x | x | x | x | x |
| 12 | x | x | 15 | 22 | x | x | 17 | 26 | x | 6 | 14 | 18 | 11 | 15 | 18 | 28 |
| 13 | 0 | 3 | x | x | 0 | 1 | x | x | 0 | 0 | 21 | 25 | 5 | 8 | 22 | 27 |
| 14 | x | x | x | x | x | x | x | x | 4 | 6 | 15 | 20 | 9 | 12 | 14 | 18 |
| 15 | x | x | x | x | x | x | x | x | 2 | 11 | 18 | 20 | 0 | 0 | 19 | 22 |
| 16 | 4 | 6 | 11 | 14 | 4 | 5 | 13 | 21 | 6 | 12 | 16 | 20 | 9 | 15 | 14 | 16 |
| 17 | 10 | 12 | 19 | 28 | 9 | 10 | 15 | 20 | x | x | x | x | x | x | x | x |
| 18 | x | x | x | x | x | x | x | x | 8 | 31 | 30 | 44 | 5 | 22 | 16 | 20 |
| 19 | 25 | 45 | x | x | 5 | 17 | x | x | 8 | 14 | 19 | 24 | 12 | 18 | 25 | 44 |
| 20 | 12 | 18 | 27 | 44 | 8 | 10 | 17 | 22 | 2 | 4 | 13 | 17 | 5 | 8 | 12 | 16 |
| 21 | 7 | 14 | 20 | 26 | 2 | 6 | 30 | 38 | x | x | x | x | x | x | x | x |
| 22 | 0 | 0 | 16 | 19 | 0 | 0 | 12 | 15 | x | x | x | x | x | x | x | x |
| 23 | 0 | 0 | x | x | 0 | 0 | x | x | 7 | 8 | 11 | 16 | 6 | 7 | 8 | 10 |
| 24 | 6 | 8 | 19 | 27 | 4 | 7 | 19 | 26 | x | x | x | x | x | x | x | x |
| 25 | x | x | x | x | x | x | x | x | 18 | 48 | x | x | 10 | 42 | x | x |
| 26 | 13 | 18 | 22 | 32 | 23 | 60 | 23 | 32 | 14 | 31 | 13 | 19 | 7 | 10 | 14 | 22 |
| 27 | 0 | 0 | 19 | 25 | 21 | 34 | 23 | 30 | x | x | x | x | x | x | x | x |
| 28 | 9 | 12 | 17 | 20 | 7 | 9 | 14 | 16 | x | x | x | x | x | x | x | x |
| 29 | 28 | 73 | 24 | 40 | 4 | 11 | 19 | 20 | x | x | x | x | x | x | x | x |
| 30 | 31 | 63 | 29 | 64 | 6 | 7 | 16 | 20 | x | x | 18 | 22 | x | x | 20 | 37 |
| 31 | x | x | x | x | x | x | x | x | 3 | 8 | 19 | 21 | 19 | 36 | 18 | 30 |

* = no observations * = yellow line emission a = index computed from low weight data CONFERENCE - STANDARDS - SOLAR PER

If

SOLAR FLARES

OCTOBER 1964

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | LOCATION | | | DURATION MINUTES | IM. FOR-TANCE | OBS. COND. | TIME U T | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|----------------------|---------|-------------------------|----------|--------------|------------|---------------------|------------------|---------------|------------|----------|---------------------|---------------------|---------------------------|--------------------------------|
| | | START | END | APPROX. LAT. | MER. DIST. | M-MATH PLAGE REGION | | | | | MEAS. AREA Sq. Deg. | COBR. AREA Sq. Deg. | MAX. WIDTH R _h | |
| [CATANIA ARCETRI | 01 1964 | 0800 E | 0830 D | 507 W21 | | | 1- | 3 | 0840 | 0.72 | 0.81 | | | |
| | 01 | 0815 E | 0845 D | 507 W23 | | | 1- | | | | | | | |
| | 01 | 1200 | NO FLARE | PATROL | | | | | | | | | | |
| | 01 | 1215 | NO FLARE | PATROL | | | | | | | | | | |
| | 01 | 1245 | NO FLARE | PATROL | | | | | | | | | | |
| | 02 | 0340 | NO FLARE | PATROL | | | | | | | | | | |
| 02 | 1215 | NO FLARE | PATROL | | | | | | | | | | | |
| 02 | 1255 | NO FLARE | PATROL | | | | | | | | | | | |
| 02 | 1355 | NO FLARE | PATROL | | | | | | | | | | | |
| 02 | 1425 | NO FLARE | PATROL | | | | | | | | | | | |
| 02 | 1445 | NO FLARE | PATROL | | | | | | | | | | | |
| 02 | 1515 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 0130 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 0255 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 0315 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 0415 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 0445 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 1200 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 1220 | NO FLARE | PATROL | | | | | | | | | | | |
| 03 | 1822 | 1825 | 1830 | N06 E44 | | | 1- | C | 1825 | 0.20 | 0.20 | 10 | | |
| 04 | 0140 | NO FLARE | PATROL | | | | | | | | | | | |
| 04 | 0345 | NO FLARE | PATROL | | | | | | | | | | | |
| 04 | 0450 | NO FLARE | PATROL | | | | | | | | | | | |
| 04 | 0920 E | 0930 | 0510 | S11 W62 | | | 1- | 3 | 0926 | 0.80 | 1.60 | | | |
| 04 | 1035 | NO FLARE | PATROL | | | | | | | | | | | |
| 04 | 1140 | NO FLARE | PATROL | | | | | | | | | | | |
| 04 | 1245 | NO FLARE | PATROL | | | | | | | | | | | |
| 04 | 1317 E | 1327 | 1433 | S11 W62 | | | 1- | 3 | 1319 | 0.80 | 1.60 | | | |
| 04 | 1420 E | 1433 | 1802 | S09 W69 | | | 1- | 3 | 1422 | 0.90 | 1.80 | | | |
| 04 | 1758 E | 1813 | 1802 | S08 W72 | | | 1- | 2 | 1802 | 0.10 | 0.20 | | | |
| 04 | 1835 | 1855 | 1840 | S08 W70 | 7508 | | 1- | 2 | 1840 | 0.40 | 1.00 | | | |
| 04 | 1838 E | 1848 | 1839 | S08 W70 | | | 1- | 2 | 1839 | 0.50 | 1.00 | | | |
| 04 | 1843 E | 1852 | 1852 | S08 W74 | | | 1- | P | 1844 | 0.20 | 0.30 | | | |
| 04 | 2012 | 2041 | 2030 | N24 W58 | | | 1- | C | 2030 | 0.20 | 0.30 | 10 | | |
| 04 | 2206 E | 2211 | 2207 | S08 W70 | | | 1- | 2 | 2207 | 0.10 | 0.20 | | | |
| 04 | 2351 E | 0031 | 2358 | S08 W71 | | | 1- | 2 | 2358 | 0.30 | 0.60 | | | |
| 05 | 0147 | 0159 | 0152 | S08 W80 | | | 1- | 2 | 0152 | 0.60 | 1.60 | | | |
| 05 | 0305 | 0445 | 0445 | PATROL | | | | | | | | | | |
| 05 | 0500 | 0505 | NO FLARE | PATROL | | | | | | | | | | |
| 05 | 0525 | 0530 | NO FLARE | PATROL | | | | | | | | | | |
| 05 | 0540 | 0550 | NO FLARE | PATROL | | | | | | | | | | |
| 05 | 0940 E | 1000 D | NO FLARE | N23 W24 | | | 1- | 3 | 0950 | 0.49 | 0.55 | | | |
| 05 | 1200 | 1205 | NO FLARE | PATROL | | | | | | | | | | |
| 05 | 1215 | 1230 | NO FLARE | PATROL | | | | | | | | | | |
| 05 | 1440 E | 1453 | NO FLARE | S10 W85 | | | 1- | 3 | 1445 | 0.30 | 0.80 | | | |
| 05 | 1454 | 1510 D | 1510 D | S10 W85 | | | 1- | 3 | 1500 | 0.60 | 0.20 | | | |
| 05 | 1801 E | 1805 | 1801 | S10 W90 | | | □ | 3 | 1801 | 0.20 | 0.20 | | | |

COMBINE - STANDARDS - BOULDER

SOLAR FLARES

OCTOBER 1964

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | LOCATION | | | DURATION MINUTES | IM. POR. TANCE | OBS. COND. | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|-------------|-----------|-------------------------|----------|--------------|------------|--------------------|------------------|----------------|------------|--------------|---------------------|---------------------|--------------------------------|
| | | START | END | APPROX. LAT. | MGR. DIST. | MATH. PLACE REGION | | | | TIME U.T. | MEAS. AREA Sq. Deg. | COOR. AREA Sq. Deg. | |
| HALEAKALA | 05 1849 | 1919 D | 1853 | S10 W90 | | | | 3 | 1853 | .20 | | | |
| HALEAKALA | 05 2010 | 2029 | 2014 | S10 W90 | | | | 2 | 2014 | .40 | | | |
| HALEAKALA | 05 2105 | 2128 | 2116 | S11 W90 | | | | 3 | 2116 | .30 | .30 | | |
| HALEAKALA | 06 0102 | 0143 | 0125 | N24 W33 | | | | 3 | 0125 | .20 | .20 | | |
| HALEAKALA | 06 0119 | 0134 | 0125 | N23 W35 | | | | 3 | 0125 | .60 | .70 | | |
| HALEAKALA | 06 0119 | 0137 D | 0121 | N26 W31 | | | | 4 | 0202 | .20 | .20 | | |
| HALEAKALA | 06 0200 | 0214 | 0202 | S09 W90 | | | | 3 | 0213 | .20 | .20 | | |
| HALEAKALA | 06 0210 | 0220 | 0213 | N23 W33 | | | | 4 | 0231 | .20 | .20 | | |
| HALEAKALA | 06 0228 | 0254 | 0231 | N24 W33 | | | | 3 | 0900 | 1.51 | 2.00 | | |
| HALEAKALA | 06 0555 | 0630 | NO FLARE | PATROL | | | | 3 | 0945 | .85 | 1.13 | | |
| HALEAKALA | 06 0635 | 0700 | NO FLARE | PATROL | | | | 3 | | | | | |
| ARCETRI | 06 0845 E | 0915 D | | N23 W39 | 7512 | | 30 D | 3 | | | | | |
| BUCHAREST | 06 0910 E | 0921 D | | N25 W37 | | | | 3 | | | | | |
| ARCETRI | 06 0945 E | | | N23 W39 | | | | 3 | | | | | |
| HALEAKALA | 06 1005 | 1015 | NO FLARE | PATROL | | | | 3 | 1923 | .20 | .20 | | |
| HALEAKALA | 06 1025 | 1030 | NO FLARE | PATROL | | | | 4 | 2020 | .30 | .40 | | |
| HALEAKALA | 06 1045 | 1055 | NO FLARE | PATROL | | | | C | 2059 | .30 | .30 | | |
| HALEAKALA | 06 1913 | 1934 | 1923 | N23 W45 | | | | 3 | 2128 | .30 | .30 | 10 | |
| HALEAKALA | 06 1950 | 2035 | 2020 | N23 W43 | | | | 3 | 2130 | .20 | .20 | 10 | |
| HALEAKALA | 06 2040 | 2115 | 2059 | N24 W44 | | | | C | 2239 | .50 | .50 | 17 | |
| LOCKHEED | 06 2122 | 2140 | 2128 | N26 W46 | | | | 3 | | 1.67 | 2.04 | | |
| HALEAKALA | 06 2128 | 2134 | 2130 | N21 W45 | | | | 3 | | .30 | .40 | | |
| LOCKHEED | 06 2128 | 2252 | 2239 | N26 W46 | | | | C | | .30 | .40 | | |
| LOCKHEED | 06 2231 | 2252 | 2237 | N26 W46 | | | | C | | .30 | .40 | | |
| SAC PEAK | 06 2233 | 2253 | 2237 | N23 W47 | | | | 3 | | .30 | .40 | | |
| HALEAKALA | 07 0038 | 0048 | 0039 | N22 W47 | | | | 2 | 0039 | .80 | 1.00 | | |
| HALEAKALA | 07 0119 | 0211 | 0138 | N26 W45 | | | | 2 | 0138 | .25 | .32 | | |
| MANILA | 07 0130 E | 0150 | | N24 W48 | | | | 2 | | .90 | .90 | | |
| BUCHAREST | 07 0330 | 0405 | NO FLARE | PATROL | | | | 2 | | .50 | .50 | | |
| BUCHAREST | 07 0720 E | 0726 D | | N25 W50 | | | | 2 | | 1.16 | 1.16 | | |
| BUCHAREST | 07 0833 E | 0842 D | | N25 W51 | | | | 3 | 0940 | .72 | .72 | | |
| BUCHAREST | 07 0857 E | 0905 D | | N25 W51 | | | | 2 | | .30 | .30 | | |
| ARCETRI | 07 0940 E | 0950 D | | N22 W52 | | | | 2 | | .60 | .60 | | |
| CAPRI-S | 07 1210 | 1235 | NO FLARE | PATROL | | | | 2 | 1312 | .26 | .33 | 18 | |
| CAPRI-S | 07 1232 E | 1338 | | N24 W51 | | | | C | | .30 | .30 | | |
| SAC PEAK | 07 1317 E | 1343 | 1330 | N26 W51 | | | | C | | .20 | .20 | | |
| CAPRI-S | 07 1342 E | 1404 | | S12 W23 | | | | P | 1400 | .50 | .50 | | |
| HUANCAYO | 07 1350 E | 1410 | | S11 W22 | | | | P | 1414 | .40 | .40 | | |
| CAPRI-S | 07 1411 E | 1416 | | S12 W23 | | | | C | | .56 | .58 | 19 | |
| SAC PEAK | 07 1411 E | 1418 | 1412 | S12 W22 | | | | C | | .30 | .30 | | |
| CAPRI-S | 07 1412 | 1418 | 1414 | S12 W22 | 7514 | | | P | 1414 | 1.00 | 1.70 | | |
| HUANCAYO | 07 1450 | 1550 | 1510 | N26 W53 | | | | C | 1510 | .40 | .40 | | |
| HUANCAYO | 07 1455 | 1505 | NO FLARE | PATROL | | | | 3 | 1508 | .42 | .43 | 21 | |
| CAPRI-S | 07 1457 | 1548 D | | S12 W24 | | | | C | | .20 | .20 | | |
| SAC PEAK | 07 1507 E | 1600 | 1533 | S12 W23 | | | | C | 1530 | .20 | .20 | 10 | |
| LOCKHEED | 07 1515 E | 1555 | 1530 | S11 W24 | | | | C | 1526 | .40 | .40 | 10 | |
| LOCKHEED | 07 1523 E | 1610 | 1526 | S12 W24 | 7514 | | | C | 1657 | .30 | .30 | 10 | |
| LOCKHEED | 07 1650 | 1720 | 1657 | S11 W24 | | | | C | 1730 | .40 | .50 | 10 | |
| LOCKHEED | 07 1715 | 1755 | 1730 | N25 W56 | | | | C | 1855 | .40 | .60 | 10 | |
| LOCKHEED | 07 1843 | 1910 | 1855 | N25 W56 | | | | C | | .20 | .20 | | |
| HALEAKALA | 07 1849 | 1905 | 1857 | N24 W57 | | | | 4 | 1857 | .20 | .30 | | |

CONFIDENTIAL - STRATEGIC - SECURITY

SOLAR FLARES

OCTOBER 1964

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | | LOCATION | | | DURA- TION -- MINUTES | IM- POR- TANCE | OBS. COND. | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|--------------------------------------|------|-------------------------|----------|---------------|-----------------|---------------|---------------------------|--------------------------------|----------------------|---------------|--------------------|---------------------------|---------------------------|--------------------------------------|
| | | START | END | MAX. PHASE | APPROX. LAT. | MER. DIST. | MCMATH PLACE REGION | | | | TIME -- U.T. | MEAS. AREA Sq. Deg. | COBR. AREA Sq. Deg. | |
| LOCKHEED [SAC PEAK [SAC PEAK | 11 | 1715 | 1738 | 1730 | N09 E90 | | | | 1- | C | .30 | 1.50 | 10 | |
| | 11 | 2119 | 2136 | 2126 | N11 E08 | | | | 1- | C | .10 | .10 | 10 | |
| | 11 | 2120 | 2136 | 2125 | N12 E08 | | | | 1- | C | .35 | .35 | 17 | |
| | 11 | | | 2132 | | | | | | | | | | |
| LOCKHEED | 12 | 1000 | 1315 | NO FLARE | PATROL | | | | 1- | C | .30 | .50 | 10 | |
| | 12 | 2325 | 2355 | D 2335 | N00 E64 | | | | | | | | | |
| MCMATH | 13 | 0000 | 0030 | NO FLARE | PATROL | | | | | | | | | |
| | 13 | 0530 | 0635 | NO FLARE | PATROL | | | | | | | | | |
| | 13 | 1130 | 1320 | NO FLARE | PATROL | | | | | | | | | |
| | 13 | 1405 | 1416 | NO FLARE | N00 W50 | 7520 | | | 1- | C | .30 | .50 | | |
| | 13 | 2030 | 2035 | NO FLARE | PATROL | | | | | | | | | |
| | 13 | | | | | | | | | | | | | |
| [SAC PEAK [MCMATH | 14 | 0535 | 0540 | NO FLARE | PATROL | | | | | | | | | |
| | 14 | 0600 | 0605 | NO FLARE | PATROL | | | | | | | | | |
| | 14 | 0610 | 0630 | NO FLARE | PATROL | | | | | | | | | |
| | 14 | 0640 | 0650 | NO FLARE | PATROL | | | | | | | | | |
| | 14 | 1155 | 1225 | NO FLARE | PATROL | | | | | | | | | |
| | 15 | 0225 | 0400 | NO FLARE | PATROL | | | | | | | | | |
| | 15 | 0600 | 0620 | NO FLARE | PATROL | | | | | | | | | |
| | 15 | 0630 | 0700 | NO FLARE | PATROL | | | | | | | | | |
| | 15 | 1200 | 1205 | NO FLARE | PATROL | | | | | | | | | |
| | 15 | 1210 | 1225 | NO FLARE | PATROL | | | | | | | | | |
| [SAC PEAK [MCMATH | 15 | 1235 | 1315 | NO FLARE | PATROL | | | | 1- | C | .70 | .74 | 17 | |
| | 15 | 1847 | 1908 | 1850 | N08 E36 | | | | 1- | C | .40 | .50 | | |
| ARCETRI | 15 | 1848 | 1855 | 1850 | N09 E35 | 7521 | | | | | | | | |
| | 16 | 0000 | 0005 | NO FLARE | PATROL | | | | | | | | | |
| | 16 | 0305 | 0530 | NO FLARE | PATROL | | | | | | | | | |
| | 16 | 1210 | 1250 | NO FLARE | PATROL | | | | | | | | | |
| | 16 | 1305 | 1310 | NO FLARE | PATROL | | | | | | | | | |
| | 17 | 0330 | 0405 | NO FLARE | PATROL | | | | | | | | | |
| | 17 | 0500 | 0530 | NO FLARE | PATROL | | | | | | | | | |
| | 17 | 0535 | 0610 | NO FLARE | PATROL | | | | | | | | | |
| | 17 | 0630 | 0635 | NO FLARE | PATROL | | | | | | | | | |
| | 17 | 1150 | 1225 | NO FLARE | PATROL | | | | | | | | | |
| ARCETRI | 18 | 0650 | 0755 | NO FLARE | PATROL | | | | 1- | 3 | .82 | .90 | | |
| | 18 | 1000 | 1300 | E 1000 | N30 E00 | | | | | | | | | |
| | 18 | 1100 | 1555 | NO FLARE | PATROL | | | | | | | | | |
| | 18 | 1500 | 1555 | NO FLARE | PATROL | | | | | | | | | |
| LOCKHEED LOCKHEED | 19 | 0605 | 0620 | NO FLARE | PATROL | | | | 1- | C | .30 | .40 | 10 | |
| | 19 | 0650 | 0655 | NO FLARE | PATROL | | | | 1- | C | .30 | .50 | 10 | |
| | 19 | 1715 | 1745 | 1727 | S11 E52 | | | | | | | | | |
| | 19 | 1800 | 1845 | 1816 | S07 W60 | | | | | | | | | |
| 20 | 1145 | 1300 | NO FLARE | PATROL | | | | | | | | | | |

CONTINUED ON REVERSE SIDE

SOLAR FLARES

OCTOBER 1964

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | MAX. PHASE | LOCATION | | MAGNITUDE | MAGNITUDE PLAGE REGION | DURATION MINUTES | IM. POR. TANCE | OBS. COND. | TIME U T | MEASUREMENTS | | MAX. WIDTH H _g | MAX. INT. % | PROVISIONAL IONOSPHERIC EFFECT |
|-------------|------|-------------------------|------|------------|-------------------------|---------------------|-----------|------------------------|------------------|----------------|------------|----------|---------------------|------|---------------------------|-------------|--------------------------------|
| | | START | END | | APPROX. LAT. NET. DIST. | MEAS. AREA Sq. Deg. | | | | | | | CORR. AREA Sq. Deg. | | | | |
| | 1964 | | | | | | | | | | | | | | | | |
| | 21 | 0020 | 0645 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 21 | 1245 | 1300 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 22 | 0115 | 0135 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 22 | 1200 | 1225 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 22 | 2355 | 2400 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 0010 | 0045 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 0140 | 0220 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 0320 | 0355 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 0415 | 0430 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 0530 | 0630 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 1200 | 1245 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 23 | 2320 | 2400 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 0005 | 0415 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 0440 | 0525 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 0610 | 0625 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 0700 | 0720 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 0730 | 0800 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 1245 | 1325 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 1345 | 1350 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 24 | 2325 | 2350 | 2329 | N06 W40 | | | | | | | 2329 | 0.20 | 0.20 | | 10 | |
| LOCKHEED | 25 | 0225 | 0230 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 0245 | 0250 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 0355 | 0400 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 0405 | 0430 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 0535 | 0550 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 0615 | 0750 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1325 | 1335 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1345 | 1355 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1405 | 1415 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1640 | 1645 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1650 | 1655 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1705 | 1710 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 1715 | 1720 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 2005 | 2025 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 25 | 2043 | 2059 | 2051 | N28 E69 | | | | | | | | 0.27 | 0.52 | | 16 | |
| SAC PEAK | 26 | 0230 | 0235 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 26 | 0520 | 0625 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 26 | 1527 | 1550 | 1535 | S20 E17 | | | | | | | | | | | | |
| | 26 | 2350 | 2400 | NO FLARE | PATROL | | | | | | | | | 0.97 | 1.00 | | 17 |
| SAC PEAK | 27 | 0015 | 0035 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 27 | 0425 | 0430 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 27 | 0620 | 0930 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 27 | 1210 | 1305 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 27 | 1315 | 1320 | NO FLARE | PATROL | | | | | | | | | | | | |
| | 28 | 0045 | 0100 | NO FLARE | PATROL | | | | | | | | | | | | |

COMMERCE - STANBURY - BOULDER

SOLAR FLARES

OCTOBER 1964

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | LOCATION | | DURATION MINUTES | IM-POP. TRACE | OBS. COND. | TIME U.T. | MEASUREMENTS | | PROVISIONAL IONOSPHERIC EFFECT |
|----------------------|------|-------------------------|------|-------------------------|---------------------|------------------|---------------|------------|-----------|---------------------|---------------------|--------------------------------|
| | | START | END | APPROX. LAT. MER. DIST. | McMATH PLACE REGION | | | | | MEAS. AREA Sq. Deg. | COBR. AREA Sq. Deg. | |
| SYDNEY | 28 | 0240 | | | | 14 | 1 | C | 0639 | 3.00 | 4.50 | |
| | 28 | 0635 | 0420 | NO FLARE | PATROL | | | | | | | |
| | 28 | 0655 | 0649 | 0639 | N24 E47 | | | | | | | |
| | 28 | 1135 | 0715 | NO FLARE | PATROL | | | | | | | |
| | 28 | 1210 | 1155 | NO FLARE | PATROL | | | | | | | |
| | 28 | 1245 | 1240 | NO FLARE | PATROL | | | | | | | |
| | 28 | 1245 | 1340 | NO FLARE | PATROL | | | | | | | |
| | 28 | 2340 | 2345 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0040 | 0105 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0120 | 0130 | NO FLARE | PATROL | | | | | | | |
| ARCETRI | 29 | 0200 | 0220 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0345 | 0430 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0510 | 0635 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0645 | 0730 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0735 | 0800 | NO FLARE | PATROL | | | | | | | |
| | 29 | 0810 | 0825 | D | S14 E06 | | 1- | 4 | 0820 | .57 | .61 | |
| | 29 | 0915 | 0920 | NO FLARE | PATROL | | | | | | | |
| | 29 | 1000 | 1020 | NO FLARE | PATROL | | | | | | | |
| | 29 | 1025 | 1030 | NO FLARE | PATROL | | | | | | | |
| | 29 | 1200 | 1250 | NO FLARE | PATROL | | | | | | | |
| SAC PEAK CAPRI-S | 29 | 1300 | 1355 | NO FLARE | PATROL | | | | | | | |
| | 29 | 1446 | 1532 | 1450 | S13 E04 | | 1- | C | | .27 | .27 | 17 |
| | 29 | 1451 | 1512 | | S12 E05 | | 1- | | 1456 | .50 | .50 | |
| | 29 | 2330 | 2400 | NO FLARE | PATROL | | | | | | | |
| | 30 | 0000 | 0045 | NO FLARE | PATROL | | | | | | | |
| ARCETRI | 30 | 0210 | 0235 | NO FLARE | PATROL | | | | | | | |
| | 30 | 0400 | 0420 | NO FLARE | PATROL | | | | | | | |
| | 30 | 0635 | 0700 | NO FLARE | PATROL | | | | | | | |
| | 30 | 1115 | 1245 | NO FLARE | PATROL | | | | | | | |
| | 30 | 2355 | 2400 | NO FLARE | PATROL | | | | | | | |
| | 31 | 0010 | 0045 | NO FLARE | PATROL | | | | | | | |
| | 31 | 0245 | 0335 | NO FLARE | PATROL | | | | | | | |
| | 31 | 0600 | 0615 | NO FLARE | PATROL | | | | | | | |
| | 31 | 0655 | 0745 | NO FLARE | PATROL | | | | | | | |
| | 31 | 0840 | 0850 | D | S08 E23 | | 1- | 2 | 0848 | .82 | .90 | |
| ONDREJOV LOCKHEED | 31 | 1000 | 1025 | NO FLARE | PATROL | | 1- | 3 | | .10 | .10 | 1.0 |
| | 31 | 1038 | 1039 | | S07 E26 | | 1- | | | | | |
| | 31 | 2330 | 2350 | 2340 | S06 E10 | | 1- | C | 2340 | .10 | .10 | 1.0 |

CONSERVATORY - STANBROOK - BOULDER

SOLAR FLARES

OCTOBER 1964

| | | | | | |
|------------|--|------------|---------------------------------------|--------------|-----------------------------|
| ATHENS | ATHENS, GREECE | HONOLULU | HAWAII, USA | NERA | NEDEHORST den BERGH, |
| BAKOU | PIRCULI, USSR | IKOMASAN | KYOTO, JAPAN | NIZMIR | NETHERLANDS |
| CAPETOWN | ROYAL OBSERVATORY, CAPE OF GOOD HOPE | KIEV KO | KIEV GAO, USSR | SAC PEAK | KRASNAYA PAKHRA, USSR |
| CAPRI F | CAPRI, ITALY (GERMAN) | KIEV KY | KIEV UNIVERSITY, USSR | SALTSJÖBADEN | SACRAMENTO PEAK, N.MEX. USA |
| CAPRI S | CAPRI, ITALY (SWEDISH) | LOCKHEED | LOS ANGELES, CALIF., USA | SCHAUNS | STOCKHOLM, SWEDEN |
| CRIMÉE | SIMEIZ, USSR | MCWATH | MCWATH-HULBERT PONTIAC, MICH., USA | TACHKENT | SCHAUINSLAND, GFR |
| HERSTMONEU | ROYAL GREENWICH OBSERVATORY, HERSTMONEUX, ENGLAND | MOSCOU | MOSCOW-GAISH, USSR | WENDEL | TASHKENT, USSR |
| HTE-PROVEN | HAUTE-PROVENCE | NEW SCHAUN | FREIBURG, GFR | | WENDELSTEIN, GFR |

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

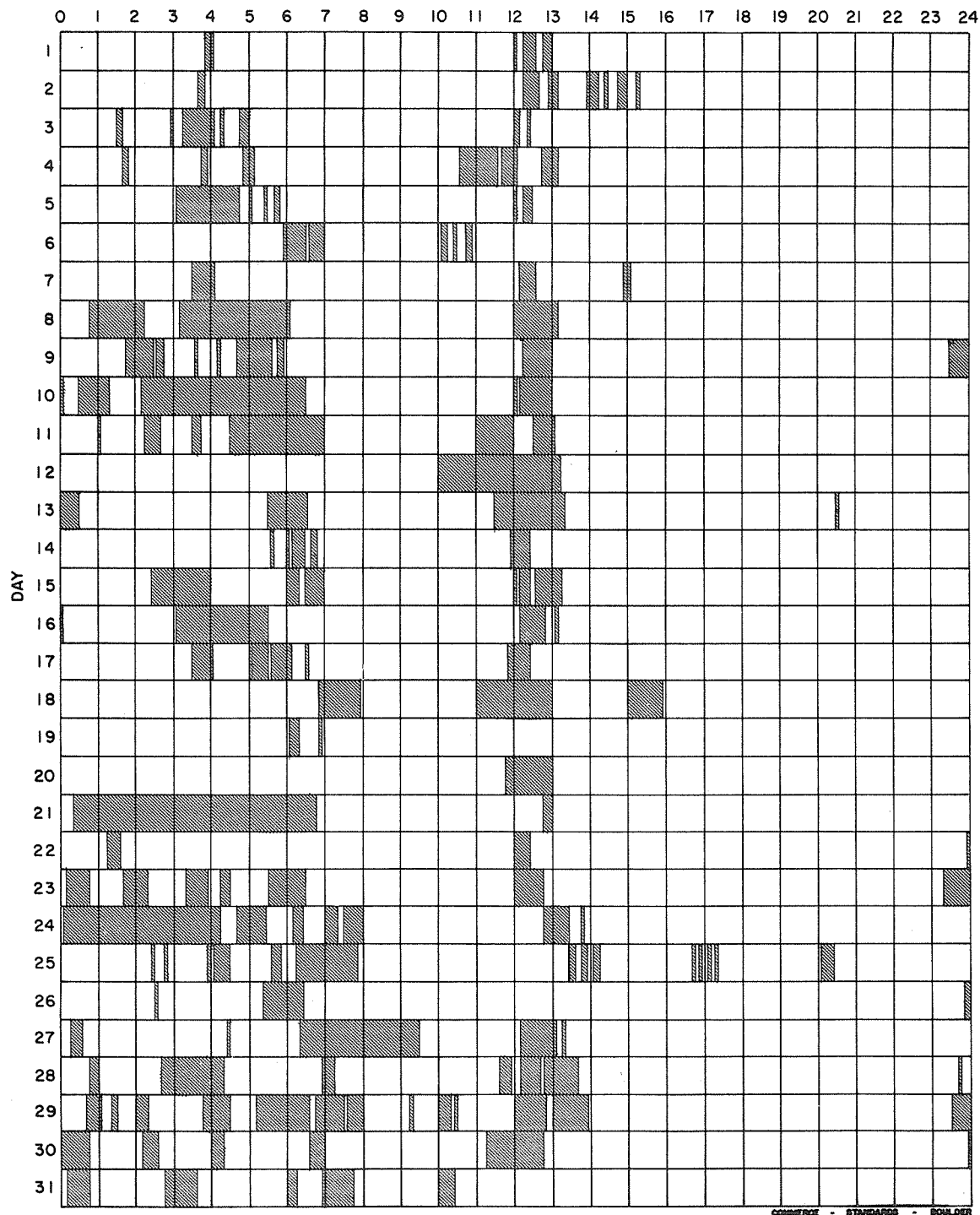
E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

INTERVALS OF NO FLARE PATROL OBSERVATIONS PROVISIONAL

IIIh

OCTOBER 1964

HOUR-UT



COMMERCE - STANDARDS - BOULDER

Observatories Include:

| | | | | | |
|-----------|----------------|----------|----------------|-----------------|---------|
| Arcetri | Catania | Ikomasan | Lockheed | Ondrejov | Sydney |
| Arosa | Haleakala | Istanbul | Manila | Ottawa | Wroclaw |
| Bucharest | Haute-Provence | Locarno | McMath-Hulbert | Sacramento Peak | Zurich |

SOLAR FLARES

JULY 1964

| OBSERVATORY | DATE JULY 1964 | OBSERVED UNIVERSAL TIME | | MAX. PHASE | LOCATION | | | DURA- TION MINUTES | IM- POR- TANCE | OBS. COND. | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|-------------|----------------------|----------------------------|--------|---------------|-----------------|---------------|----------------------------|--------------------------|----------------------|---------------|------------------|---------------------------|---------------------------|--------------------------------------|
| | | START | END | | APPROX. LAT. | MER. DIST. | MAGNATH FLARE REGION | | | | TIME — U T | MEAS. AREA Sq. Deg. | COBR. AREA Sq. Deg. | |
| SYDNEY | 01 | 0006 | 0017 | 0011 | S04 E51 | | | | 1- | C | 0011 | 0.40 | 0.60 | |
| | 01 | 0340 | 0350 | NO FLARE | PATROL | | | | | | | | | |
| SYDNEY | 02 | 0025 | 0037 | 0032 | N08 W40 | | | | 1- | C | 0032 | 0.50 | 0.60 | |
| UCCLE | 04 | 0915 | 0924 | | N32 E62 | | | | | | | | | |
| | 06 | 0220 | 0230 | NO FLARE | PATROL | | | | | | | | | |
| | 06 | 0245 | 0300 | NO FLARE | PATROL | | | | | | | | | |
| UCCLE | 06 | 1022 | 1025 | | N33 E36 | | | | 1- | | | | | |
| UCCLE | 06 | 1054 | 1056 | | N33 E36 | | | | 1- | | | | | |
| UCCLE | 06 | 1258 | 1312 | 1301 | N32 E34 | | | | 1- | | 1301 | 3.00 | 4.20 | |
| UCCLE | 07 | 0841 | 0848 | 0843 | N33 E25 | | | | 1- | | 0843 | 1.00 | 1.00 | |
| CLIMAX | 07 | 1232 | 1237 | 1233 | N30 E24 | | | | 1- | C | 1233 | 0.20 | 0.20 | |
| UCCLE | 07 | 1336 | 1338 | | N32 E21 | | | | 1- | | | | | |
| CLIMAX | 07 | 1420 | 1440 | | N32 E22 | | | | 1- | | | | | |
| UCCLE | 07 | 1424 E | 1431 D | | N34 E22 | | | | 1- | | 1427 | 0.50 | 0.60 | |
| UCCLE | 07 | 1547 | 1557 | | N32 E20 | | | | 1- | | | | | |
| SYDNEY | 09 | 0137 | 0147 | 0143 | N34 E03 | | | | 1- | | 0143 | 0.60 | 0.70 | |
| HALEKALA | 09 | 0140 | 0146 | 0142 | N33 E02 | | | | 1- | C | 0142 | 0.40 | 0.41 | |
| IRKUTSK | 09 | 0141 E | 0151 D | 0142 | N33 E00 | | | | 1- | | | 0.20 | 0.20 | |
| HALEKALA | 09 | 2117 | 2143 | 2124 | N31 W14 | | | | 1- | C | 2124 | 0.20 | 0.20 | |
| | 11 | 0200 | 0250 | NO FLARE | PATROL | | | | | | | | | |
| | 11 | 0410 | 0425 | NO FLARE | PATROL | | | | | | | | | |
| SYDNEY | 14 | 0014 | 0109 | 0027 | N27 E49 | | | | 1- | C | 0027 | 0.60 | 1.00 | |
| SYDNEY | 14 | 0141 | 0221 | 0200 | N27 E49 | | | | 1- | C | 0200 | 0.60 | 1.00 | |
| SYDNEY | 14 | 0209 | 0228 | 0214 | N27 E46 | | | | 1- | C | 0214 | 0.40 | 0.60 | |
| SYDNEY | 14 | 0252 | 0317 | 0259 | N27 E46 | | | | 1- | C | 0259 | 0.40 | 0.60 | |
| SYDNEY | 14 | 0327 | 0347 | 0335 | N27 E49 | | | | 1- | C | 0335 | 0.40 | 0.60 | |
| SYDNEY | 14 | 0357 | 0410 D | 0407 | N26 E44 | | | | 1- | P | 0407 | 0.60 | 0.60 | |
| SYDNEY | 14 | 0430 | 0535 | 0453 | N27 E49 | | | | 1- | C | 0453 | 0.60 | 1.00 | |
| ATHENS | 14 | 0716 E | 0727 | | N28 E40 | | | | 2 | | | 0.60 | 0.80 | |
| BUCHARST | 14 | 0805 E | 0817 D | | N28 E44 | | | | 1- | C | | 1.50 | 1.50 | |
| CAPETOWN | 14 | 0805 E | 0822 | 0813 | N29 E45 | | | | 1- | C | 0813 | 0.90 | 1.40 | |
| UCCLE | 14 | 0815 E | 0819 | | N28 E45 | 7404 | | 4 D | 1- | | | 3.50 | 5.20 | |
| UCCLE | 14 | 0830 E | 0833 | | N08 E05 | | | | 1- | | | | | |
| UCCLE | 14 | 0902 | 0905 | | N27 E42 | | | | 1- | | | | | |
| UCCLE | 14 | 0944 | 0954 | | N30 E43 | | | | 1- | | | | | |
| UCCLE | 14 | 1015 | 1019 | | N07 E06 | | | | 1- | | | | | |
| UCCLE | 14 | 1043 | 1050 | | N07 E06 | | | | 1- | | | | | |
| UCCLE | 14 | 1051 | 1057 | 1054 | N30 E43 | | | | 1- | | | | | |
| UCCLE | 14 | 1128 | 1143 | 1132 | N30 E43 | | | | 1- | | | | | |
| UCCLE | 14 | 1202 | 1213 | 1204 | N30 E42 | | | | 1- | | | | | |
| SYDNEY | 15 | 0517 | 0525 | 0520 | N26 E33 | | | | 1- | C | 0520 | 0.80 | 1.00 | |
| SYDNEY | 16 | 2355 | 0025 | 0015 | N15 W80 | | | | 1- | C | 0015 | 0.40 | | |

SOLAR FLARES

JULY 1964

| OBSERVATORY | DATE JUL 1964 | OBSERVED UNIVERSAL TIME | | MAX. PHASE | LOCATION | | | MATH PLACE REGION | DURA- TION MINUTES | IM- POR- TANCE | OBS. COND. | TIME U T | MEASUREMENTS | | PROVISIONAL IONOSPHERIC EFFECT |
|-------------|---------------------|-------------------------|--------|---------------|----------|------|---------------|-------------------------|--------------------------|----------------------|---------------|-------------|---------------------------|---------------------------|--------------------------------------|
| | | START | END | | APPROX. | LAT. | MER. DIST. | | | | | | MEAS. AREA Sq. Deg. | COOR. AREA Sq. Deg. | |
| SYDNEY | 17 | 0455 | 0525 D | 0511 | N03 E03 | | | | | | P | 0511 | 1.00 | 1.00 | |
| | 19 | 0200 | 0210 | NO FLARE | PATROL | | | | | | C | 2132 | 0.40 | 0.40 | |
| CLIMAX | 27 | 2128 | 2133 D | | N20 W51 | | | | | | | | | | |
| | 29 | 2015 | 2020 | NO FLARE | PATROL | | | | | | | | | | |
| | 29 | 2240 | 2245 | NO FLARE | PATROL | | | | | | | | | | |
| | 29 | 2300 | 2305 | NO FLARE | PATROL | | | | | | | | | | |
| | 29 | 2325 | 2400 | NO FLARE | PATROL | | | | | | | | | | |

COMMERCE - STANDARD - BOULDER

These flares are addenda to the July 1964 flares published in CRPL-F 240 Part B for August 1964

| | | | | |
|----------------|------------------------------|----------------------------|--------------------|--------------------------------------|
| ATHENS, GREECE | HONOLULU | HAWAII, USA | NERA | NEDERHORST den BERGH, NETHERLANDS |
| BAKOU | IKOMASAN | KYOTO, JAPAN | | KRASNAVA PAKHRA, USSR |
| CAPETOWN | KIEV KO | KIEV GAO, USSR | NIZHIR | SACRAMENTO PEAK, N.MEX. USA |
| | ROYAL OBSERVATORY, | KIEV KY | SAC PEAK | STOCKHOLM, SWEDEN |
| | CAPE OF GOOD HOPE | LOCKHEED | SALTSJÖBADEN | SCHAUINSLAND, GFR |
| CAPRI F | CAPRI, ITALY (GERMAN) | MCWATH | SCHAULINS | TASHKENT, USSR |
| CAPRI S | CAPRI, ITALY (SWEDISH) | MCWATH-HULBERT | TACHKENT | WENDELSTEIN, GFR |
| CRIMEE | SIMEIZ, USSR | PONTIAC | MICH., USA | |
| HERSTMONCEU | ROYAL GREENWICH OBSERVATORY, | MOSCOU | MOSCOW-GAISH, USSR | |
| | HERSTMONCEUX, ENGLAND | | | |
| ITE-PROVEN | HAUTE-PROVENCE | NEW SCHAULIN FREIBURG, GFR | | |

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

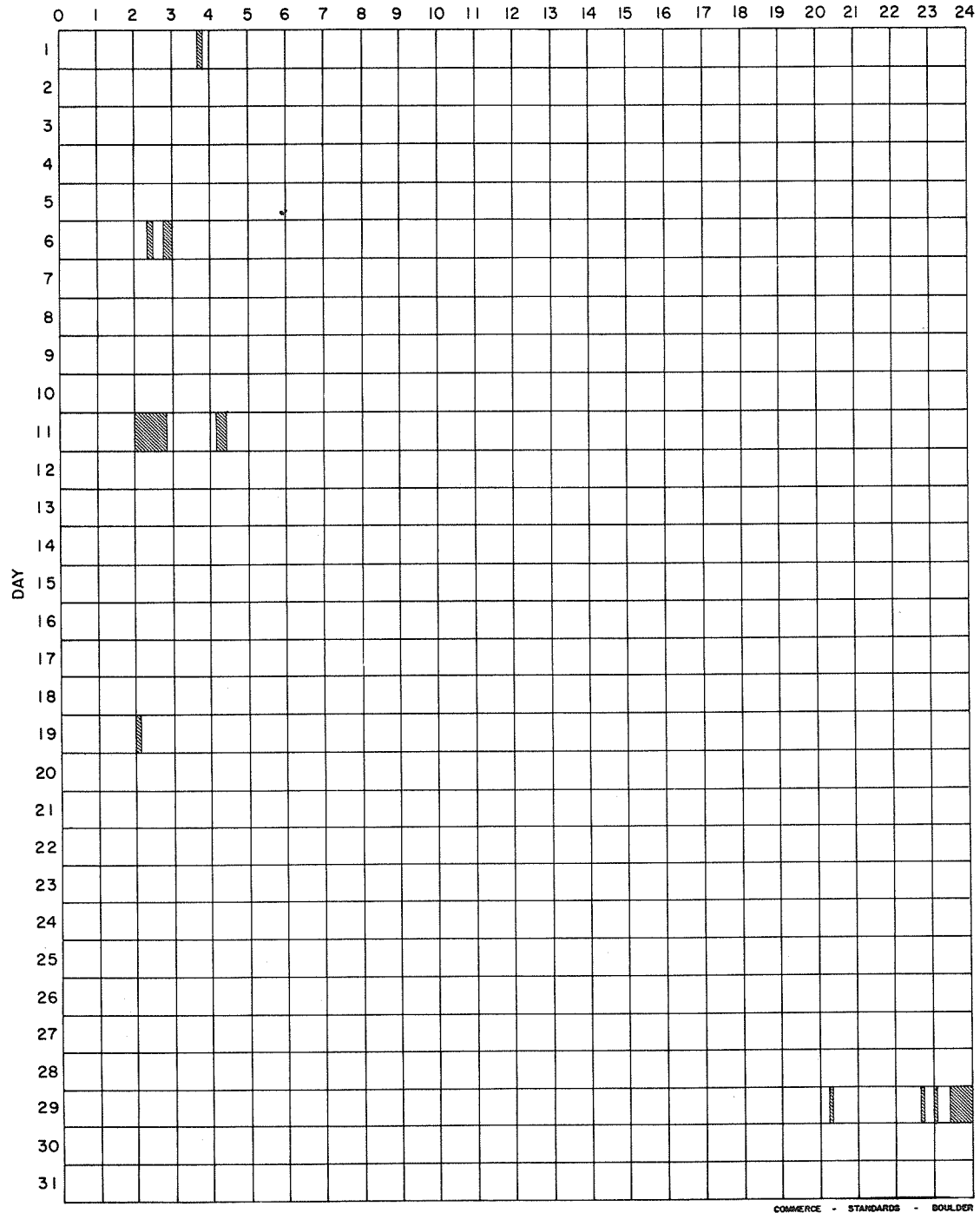
E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

Erratum: In CRPL-F 242 B page IIIb for October 1964 the flare reported by Lockheed for September 7, 1964 which began at 2055 and ended at 2119 U.T. at N21 and E39 should have been N31 and E39 instead.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JULY 1964

HOURLY-UT



COMMERCE - STANDARDS - BOULDER

Observatories Included:

- | | | | | | |
|-------------------|----------------|------------|----------------|-----------------|---------|
| Abastumani | Capetown | Huancayo | Locarno | Ottawa | Wroclaw |
| Arcetri | Catania | Ikomasan | Lockheed | Sacramento Peak | Zurich |
| Arosa | Climax | Irkutsk | Lvov | Sydney | |
| Athenes | Dunsink | Istanbul | Manila | Tashkent | |
| Bucharest | Haleakala | Izmiran | McMath-Hulbert | Uccle | |
| Capri-F (German) | Haute-Provence | Kiev-KO | Mitaka | Voroshilov | |
| Capri-S (Swedish) | Herstmonceux | Kodaikana1 | Ondrejov | Wendelstein | |

SOLAR RADIATION MONITORING SATELLITE
AVERAGE X-RAY FLUX

JANUARY, 1964

NRL

| Date | Times of Observation | Average X-Ray Flux | | | | Date | Times of Observation | Average X-Ray Flux | | | | |
|------------|--|------------------------|------------------------|-------------------------|-------------------------|--------------------|--|--|--|---|--|----------------------------------|
| | | 44-60A | 44-55A | 8-12A | 0-8A | | | 44-60A | 44-55A | 8-12A | 0-8A | |
| January 11 | 2146 2207 2332 2347 | 2.0 x 10 ⁻³ | 1.1 x 10 ⁻³ | 2.3 x 10 ⁻⁴ | 6.7 x 10 ⁻⁴ | January 22 | 0925 0941 1257 1305 1439 1497 1638 1613 2063 2016 | 2.2 x 10 ⁻² | 1.0 x 10 ⁻² | <2.0 x 10 ⁻⁴ | 6.6 x 10 ⁻⁴ | <1.5 x 10 ⁻⁴ |
| January 12 | 0227 0243 1439 1505 1639 1655 1823 1838 1958 2023 2155 2211 2342 2356 | 2.8 x 10 ⁻³ | 1.2 x 10 ⁻³ | 2.5 x 10 ⁻⁴ | 6.9 x 10 ⁻⁴ | January 23 | 0936 0950 1490 1504 1636 1644 1821 1841 2152 2201 | 2.0 x 10 ⁻² | 0.9 x 10 ⁻² | <2.1 x 10 ⁻⁴ | <7.7 x 10 ⁻⁴ | <1.5 x 10 ⁻⁴ |
| January 13 | 1650 1714 1831 1846 2006 2022 2205 2220 2351 0004 | 2.8 x 10 ⁻³ | 1.1 x 10 ⁻³ | 3.3 x 10 ⁻⁴ | 8.1 x 10 ⁻⁴ | January 24 | 0757 0813 1110 1127 1457 1513 2019 2026 | 1.8 x 10 ⁻² | 0.8 x 10 ⁻² | <2.2 x 10 ⁻⁴ | 4.3 x 10 ⁻⁴ | <1.6 x 10 ⁻⁴ |
| January 14 | 0956 1013 1310 1326 1700 1716 1845 1856 2213 2230 | 2.7 x 10 ⁻² | 1.3 x 10 ⁻³ | 3.3 x 10 ⁻⁴ | 9.0 x 10 ⁻⁴ | January 25 | 1507 1521 1650 1704 1840 1852 2025 2040 | 1.7 x 10 ⁻² | 0.6 x 10 ⁻² | <2.2 x 10 ⁻⁴ | 5.1 x 10 ⁻⁴ | <1.6 x 10 ⁻⁴ |
| January 15 | 0603 0612 0811 0827 1338 1345 1521 1536 1707 1724 1839 1855 2040 2052 2224 2233 | 2.6 x 10 ⁻² | 1.2 x 10 ⁻³ | 2.9 x 10 ⁻⁴ | 9.0 x 10 ⁻⁴ | January 26 | 0816 0830 1138 1206 1603 1615 1848 1902 2034 2044 | 2.2 x 10 ⁻² | 1.5 x 10 ⁻² | 6.8 x 10 ⁻⁴ | 9.5 x 10 ⁻⁴ | <1.6 x 10 ⁻⁴ |
| January 16 | 1328 1344 1347 1355 1530 1546 1716 1731 1859 1914 2034 2047 | 2.4 x 10 ⁻² | 1.0 x 10 ⁻³ | 1.6 x 10 ⁻⁴ | 6.2 x 10 ⁻⁴ | January 27 | 0927 0836 1138 1206 1527 1538 1855 1912 2041 2057 | 1.8 x 10 ⁻² | 0.7 x 10 ⁻² | <2.0 x 10 ⁻⁴ | <7.8 x 10 ⁻⁴ | <1.5 x 10 ⁻⁴ |
| January 17 | 1024 1038 1338 1406 1539 1554 1727 1738 1908 1925 2245 2253 | 2.5 x 10 ⁻² | 1.1 x 10 ⁻³ | 1.7 x 10 ⁻⁴ | 7.7 x 10 ⁻⁴ | January 28 | 1207 1214 1406 1422 1539 1546 1905 1919 | 2.6 x 10 ⁻² | 1.6 x 10 ⁻² | 5.7 x 10 ⁻⁴ | 10.6 x 10 ⁻⁴ | <1.5 x 10 ⁻⁴ |
| January 18 | 1201 1217 1405 1417 1548 1604 1736 1746 | 2.7 x 10 ⁻² | 1.4 x 10 ⁻³ | 3.3 x 10 ⁻⁴ | 10.4 x 10 ⁻⁴ | January 29 | 1216 1227 1359 1417 1640 1657 1912 1926 | 2.6 x 10 ⁻² | 1.5 x 10 ⁻² | 5.2 x 10 ⁻⁴ | 8.2 x 10 ⁻⁴ | <1.4 x 10 ⁻⁴ |
| January 19 | 1910 1926 1412 1427 1558 1613 1740 1756 | 2.7 x 10 ⁻² | 1.3 x 10 ⁻³ | 2.3 x 10 ⁻⁴ | 10.6 x 10 ⁻⁴ | January 30 | 1222 1237 1408 1431 1745 1752 1923 1937 | 2.6 x 10 ⁻² | 1.3 x 10 ⁻² | 5.7 x 10 ⁻⁴ | 7.2 x 10 ⁻⁴ | <1.3 x 10 ⁻⁴ |
| January 20 | 0907 0923 1219 1236 1456 1471 1553 1622 1842 1951 2127 2139 | 2.9 x 10 ⁻² | 1.7 x 10 ⁻³ | 4.0 x 10 ⁻⁴ | 15.5 x 10 ⁻⁴ | January 31 | 0929 1046 1231 1246 1412 1428 1430 1446 1559 1615 1941 1946 | 2.9 x 10 ⁻² | 1.1 x 10 ⁻² | 5.4 x 10 ⁻⁴ | 7.8 x 10 ⁻⁴ | <1.2 x 10 ⁻⁴ |
| January 21 | 0916 0931 1248 1256 1456 1471 1602 1630 1748 1805 1947 2000 | 2.3 x 10 ⁻² | 1.2 x 10 ⁻³ | <2.0 x 10 ⁻⁴ | 6.4 x 10 ⁻⁴ | Outstanding Events | 0907 0923 1331 1345 1353 1408 | 4.1 x 10 ⁻² 3.5 x 10 ⁻² 7.6 x 10 ⁻² 3.1 x 10 ⁻² | 9.7 x 10 ⁻³ 4.9 x 10 ⁻³ 2.1 x 10 ⁻³ | 12 x 10 ⁻⁴ 33 x 10 ⁻⁴ 9.4 x 10 ⁻⁴ 7.2 x 10 ⁻⁴ 15 x 10 ⁻⁴ | 6.3 x 10 ⁻⁴ 3.3 x 10 ⁻⁴ 3.3 x 10 ⁻⁴ 1.5 x 10 ⁻⁴ | 1- Flare 2- Flare 1- Flare |

COMMERCE - STANARDS - BOULDER

III m

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS SUDDEN PHASE ANOMALIES
SUDDEN COSMIC NOISE ABSORPTION SUDDEN ENHANCEMENTS OF SIGNAL
SUDDEN ENHANCEMENTS OF ATMOSPHERICS SUDDEN FREQUENCY DEVIATIONS
SOLAR NOISE BURSTS AT 18 Mc/s

SEPTEMBER 1964

| SEPT. 1964 | UNIVERSAL TIME | | | TYPE SWF IMP | IMPORTANCE | | | | | | BUR | WIDE SPREAD INDEX | STATIONS | KNOWN FLARE |
|----------------|----------------|-----|-----|--------------------|------------|------|-----|-----|-----|-----|-----|-------------------------|----------|----------------|
| | START | END | MAX | | ABS | SCNA | SEA | SPA | SES | SFD | | | | |
| None observed. | | | | | | | | | | | | | | |

RIOMETER EVENTS

IIIIn

(Provisional)

SEPTEMBER 1964

South Pole

26 Mc/s

| SEPT. 1964 | START UT | END UT | MAX. UT | MAX. ABSORP. db, (tenths) | NO. OF PEAKS | SEPT. 1964 | START UT | END UT | MAX. UT | MAX. ABSORP. db, (tenths) | NO. OF PEAKS |
|---------------|-------------|-----------|------------|------------------------------------|--------------------|---------------|-------------|-----------|------------|------------------------------------|--------------------|
| 1 | 1038 | 2014 | 1436 | 9 | 1 | 18 | 0304 | 0413 | 0308 | 3 | 3 |
| 2 | 0010 | 0314 | 0104 | 43 | 2 | 19 | 1347 | 1803 | 1531 | 10 | 1 |
| 2 | 1319 | 1705 | 1432 | 11 | 2 | 20 | 2152 | 2200 | 2152 | 6 | 1 |
| 3 | 0029 | 0537 | 0242 | 32 | 1 | 21 | * | | | | |
| 3 | 1127 | 2048 | 1909 | 7 | 7 | 22 | 0309 | 0411 | 0312 | 9 | 1 |
| 4 | 0923 | 2202 | 1212 | 20 | 1 | 23 | 0143 | 0253 | 0158 | 17 | 1 |
| 5 | 0326 | 0532 | 0345 | 11 | 1 | 23 | 0802 | 0451 | 0400 | 19 | 2 |
| 5 | 1017 | 1748 | 1405 | 8 | 4 | 24 | 0852 | 2033 | 1550 | 17 | 3 |
| 6 | 0251 | 1810 | 1606 | 5 | 4 | 25 | 0132 | 0238 | 0154 | 8 | 1 |
| 6 | 2040 | 2054 | 2046 | 3 | 3 | 25 | 2305 | 0201 | 0126 | 28 | 1 |
| 7 | 0057 | 0204 | 0152 | 5 | 2 | 27 | * | | | | |
| 7 | 1002 | 1805 | 1248 | 18 | 2 | 28 | 0000 | 0320 | 0257 | 11 | 1 |
| 7 | 2038 | 0209*** | 2243 | 79 | 3 | 28 | 0751 | 1910 | 0949 | 13 | 3 |
| 10 | 1354 | 1221 | 0018 | 30 | 3 | 29 | 0000 | 0025 | 0006 | 3 | 1 |
| 12 | 0141 | 0212 | 0149 | 13 | 2 | 29 | 1246 | 1843 | 1501 | 13 | 1 |
| 13 | * | | | | | 30 | 0452 | ** | 0045 | 22 | 4 |
| 14 | * | | | | | | | | | | |
| 15 | * | | | | | | | | | | |
| 16 | 1238 | ** | 1824 | 9 | 1 | | | | | | |
| 17 | 1146 | 1829 | 1323 | 11 | 1 | | | | | | |

COMMERCE - STANDARDS - BOULDER

* = No event.

** = Uncertain.

*** = Ending, September 9, 1964 at 0209 U.T.

IVa

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

OCTOBER 1964

ARO-DRAO (OTTAWA)

2800;2700 Mc/s

| OCT. 1964 | U R A N E | DESCRIPTIVE TYPE | START UT | DURATION HRS. MIN. | MEAN FLUX | MAXIMUM | | REMARKS |
|----------------|-----------------------|---------------------|-------------|-----------------------|--------------|---------|------|---------|
| | | | | | | TIME | FLUX | |
| None observed. | | | | | | | | |

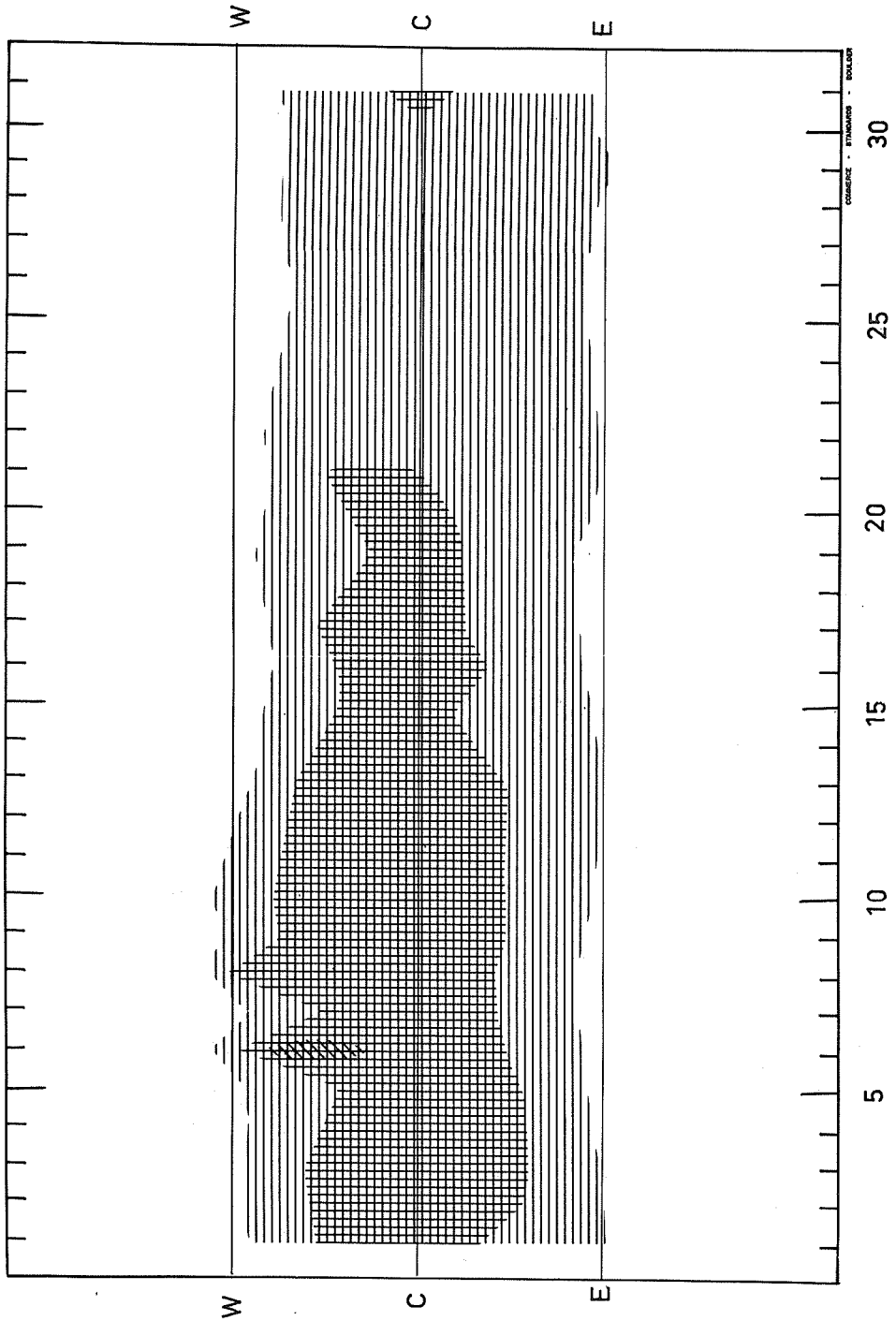
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

OCTOBER 1964

NANÇAY

169 Mc/s



OCTOBER 1964

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

OCTOBER 1964

NBS BOULDER

108 Mc/s

None observed

NOMINAL TIMES OF OBSERVATION

OCTOBER 1964

NBS BOULDER

108 Mc/s

| Oct. 1964 | HOURS OF OBSERVATION U.T. | HOURS OF INTERFERENCE U.T. | Oct. 1964 | HOURS OF OBSERVATION U.T. | HOURS OF INTERFERENCE U.T. |
|--------------|---------------------------------------|----------------------------------|--------------|---------------------------------|----------------------------------|
| 1 | 1301-0028 | | 16 | 1316-0005 | |
| 2 | 1302-0026 | | 17 | 1317-0003 | |
| 3 | 1303-0025 | | 18 | 1318-0002 | 1526-1558; 1855-1925 |
| 4 | 1304-0023 | 1858-1945 | 19 | 1319-0000 | |
| 5 | 1305-0021 | | 20 | 1320-2359 | |
| 6 | 1306-0020 | | 21 | 1322-2357 | |
| 7 | 1307-0018 | | 22 | 1323-1852; 1915-2356 | |
| 8 | 1945-0017 | | 23 | 1324-2355 | |
| 9 | 1309-2234; 2325-0015 | | 24 | 1325-2353 | |
| 10 | 1310-2250 | 1705-2250 | 25 | 1326-2352 | |
| 11 | 1311-0012 | 1719-1725 | 26 | 1327-2351 | |
| 12 | 1312-1612; 1632-0011 | | 27 | 1328-2349 | |
| 13 | 1313-1645; 1801-2218; 2227-0009 | | 28 | 1329-2348 | |
| 14 | 1314-1546; 1556-2052; 2102-0008 | | 29 | 1330-2347 | |
| 15 | 1315-0006 | | 30 | 1331-2345 | 1938-1942; 2216-2345 |
| | | | 31 | 1333-2344 | |

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

IVd

JULY 1964

Fort Davis

50-320 Mc/s

| 1964 <small>USCNR 483-8</small> | OBSERVING HOURS | IMPORTANT BURSTS | | | FREQUENCY RANGE MC. | REMARKS |
|------------------------------------|-----------------|------------------|----------------|------|---------------------------|---------|
| | | TYPE | TIMES U. T. | INT. | | |
| Jul. 1 | 1231-2230 | | | | | |
| Jul. 2 | 1231-2230 | | | | | |
| Jul. 3 | 1231-2230 | | | | | |
| Jul. 4 | 1231-2230 | | | | | |
| Jul. 5 | 1231-2230 | | | | | |
| Jul. 6 | 1231-2230 | | | | | |
| Jul. 7 | 1231-2230 | | | | | |
| Jul. 8 | 1231-2230 | | | | | |
| Jul. 9 | 1231-2230 | | | | | |
| Jul. 10 | 1231-2230 | | | | | |
| Jul. 11 | 1231-2230 | | | | | |
| Jul. 12 | 1231-2230 | | | | | |
| Jul. 13 | 1231-2230 | | | | | |
| Jul. 14 | 1231-2230 | | | | | |
| Jul. 15 | 1232-2230 | | | | | |
| Jul. 16 | 1231-2230 | | | | | |
| Jul. 17 | 1231-2230 | | | | | |
| Jul. 18 | 1231-2230 | | | | | |
| Jul. 19 | 1231-2230 | | | | | |
| Jul. 20 | 1231-2230 | | | | | |
| Jul. 21 | 1232-2230 | | | | | |
| Jul. 22 | 1231-2230 | | | | | |
| Jul. 23 | 1231-2230 | | | | | |
| Jul. 24 | 1231-2230 | | | | | |
| Jul. 25 | 1231-2230 | | | | | |
| Jul. 26 | 1231-2230 | | | | | |
| Jul. 27 | 1231-2230 | | | | | |
| Jul. 28 | 1231-2230 | | | | | |
| Jul. 29 | 1231-2230 | | | | | |
| Jul. 30 | 1231-2230 | | | | | |
| Jul. 31 | 1230-2230 | | | | | |

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1964

Fort Davis

50-320 Mc/s

| 196 4 <small>USC&AF FORM 15</small> | OBSERVING HOURS | IMPORTANT BURSTS | | | FREQUENCY RANGE MC. | REMARKS |
|--|-------------------------|------------------|----------------|------|---------------------------|-----------------------|
| | | TYPE | TIMES U. T. | INT. | | |
| Aug. 1 | 1302-2300 | | | | | |
| Aug. 2 | 1302-2300 | | | | | 1929: U bursts |
| Aug. 3 | 1302-2300 | | | | | |
| Aug. 4 | 1303-2300 | | | | | |
| Aug. 5 | 1302-2300 | | | | | |
| Aug. 6 | 1303-2300 | | | | | |
| Aug. 7 | 1302-2300 | | | | | |
| Aug. 8 | 1302-2300 | | | | | |
| Aug. 9 | 1303-2300 | | | | | |
| Aug. 10 | 1303-2300 | | | | | |
| Aug. 11 | 1302-2300 | | | | | |
| Aug. 12 | 1303-2300 | | | | | |
| Aug. 13 | 1302-2300 | | | | | |
| Aug. 14 | 1303-2300 | | | | | Weak I throughout day |
| Aug. 15 | 1302-2300 | | | | | Weak I throughout day |
| Aug. 16 | 1303-2300 | | | | | Weak I during day |
| Aug. 17 | 1305-2300 | | | | | |
| Aug. 18 | 1303-2300 | | | | | |
| Aug. 19 | 1303-2300 | | | | | |
| Aug. 20 | 1302-2300 | | | | | |
| Aug. 21 | 1302-2300 | | | | | |
| Aug. 22 | 1302-2300 | | | | | |
| Aug. 23 | 1303-2300 | | | | | |
| Aug. 24 | 1303-2300 | | | | | |
| Aug. 25 | 1304-2034; 2107-2300 | | | | | |
| Aug. 26 | 1303-2300 | | | | | |
| Aug. 27 | 1303-2300 | | | | | |
| Aug. 28 | 1303-2300 | | | | | |
| Aug. 29 | 1303-2300 | | | | | |
| Aug. 30 | 1303-2300 | | | | | |
| Aug. 31 | 1305-2300 | | | | | |

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

IVf

SEPTEMBER 1964

Fort Davis

50-320 Mc/s

| 196 4 <small>1964 SEP 4</small> | OBSERVING HOURS | IMPORTANT BURSTS | | | FREQUENCY RANGE MC. | REMARKS |
|------------------------------------|-----------------|------------------|----------------|------|------------------------|---------|
| | | TYPE | TIMES U. T. | INT. | | |
| Sep. 1 | 1330-2330 | | | | | |
| Sep. 2 | 1330-2330 | | | | | |
| Sep. 3 | 1330-2330 | | | | | |
| Sep. 4 | 1330-2330 | | | | | |
| Sep. 5 | 1330-2330 | | | | | |
| Sep. 6 | 1330-2300 | | | | | |
| Sep. 7 | 1330-2330 | | | | | |
| Sep. 8 | 1330-2330 | | | | | |
| Sep. 9 | 1330-2330 | | | | | |
| Sep. 10 | 1330-2330 | | | | | |
| Sep. 11 | 1330-2330 | | | | | |
| Sep. 12 | 1330-2330 | | | | | |
| Sep. 13 | 1330-2330 | | | | | |
| Sep. 14 | 1330-2330 | | | | | |
| Sep. 15 | 1330-2330 | | | | | |
| Sep. 16 | 1330-2330 | | | | | |
| Sep. 17 | 1330-2330 | | | | | |
| Sep. 18 | 1330-2330 | | | | | |
| Sep. 19 | 1330-2330 | IIIG | 2219-2220 | 2 | 175-~100 | |
| Sep. 20 | 1330-2330 | | | | | |
| Sep. 21 | 1330-2330 | | | | | |
| Sep. 22 | 1330-2330 | | | | | |
| Sep. 23 | 1330-2330 | | | | | |
| Sep. 24 | 1330-2330 | | | | | |
| Sep. 25 | 1330-2330 | | | | | |
| Sep. 26 | 1330-2330 | | | | | |
| Sep. 27 | 1332-2330 | | | | | |
| Sep. 28 | 1330-2330 | | | | | |
| Sep. 29 | 1330-2330 | | | | | |
| Sep. 30 | 1331-2330 | | | | | |

**SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS**

OCTOBER 1964

High Altitude Observatory
Boulder

7.6-41 Mc/s

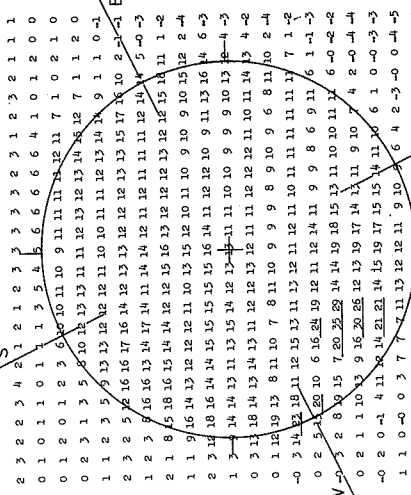
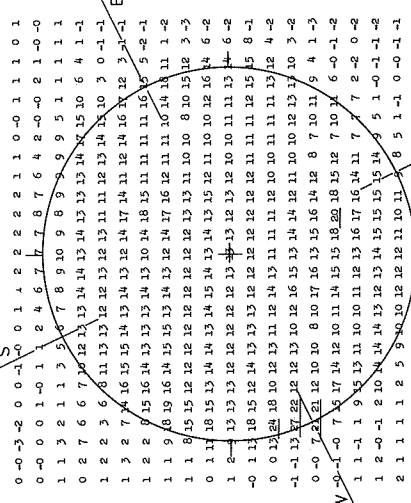
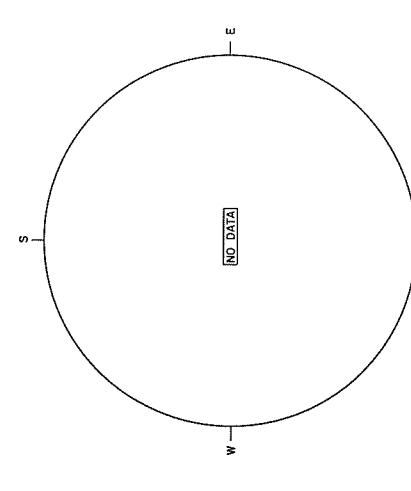
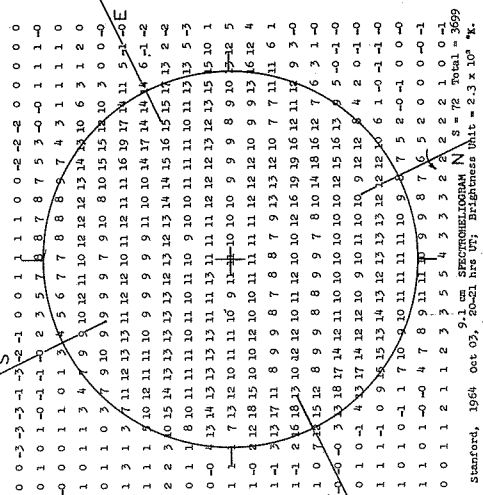
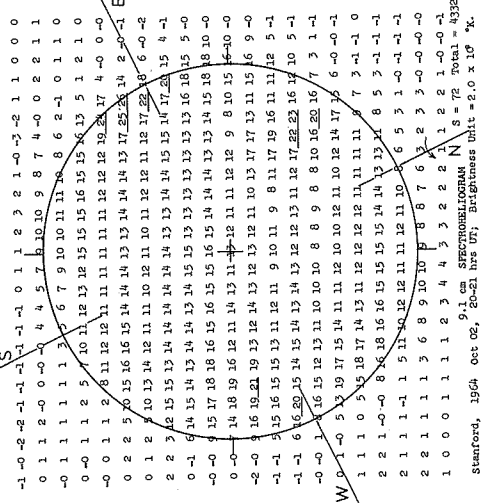
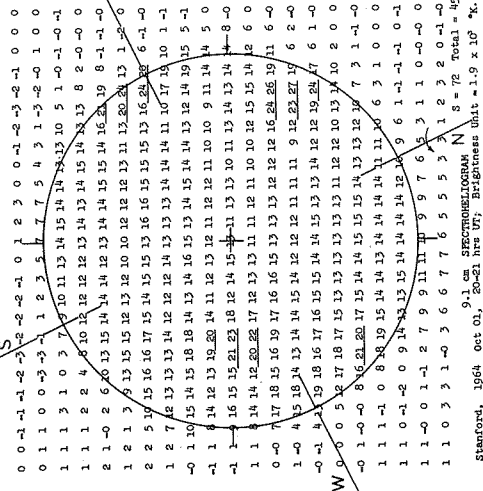
| Date Oct 1964 | Bursts | | | Frequency Range (Mc/s) |
|---------------------|------------|-----------------|----------------|---------------------------|
| | Type | Time (U.T.) | Inten- sity | |
| 5 Oct | III | 1834:45-1835:30 | 1 | 7-35 |
| | III | 2053-2053:30 | 2 | 22-41 |
| 6 | III | 2153:30-2154 | 1 | 12-41 |
| | III | 2333:30-2334 | 1 | 19-41 |
| 7 | III | 2148-2148:30 | 1- | 21-41 |
| 8 | III | 1543:45-1544:30 | 2 | 21-41 |
| 11 | III | 1539:30-1540 | 1- | 26-41 |
| 13 | III | 1729:45-1730:15 | 1- | 20-41 |
| 20 | No Observ. | 1400-1813 | | |
| 21 | No Observ. | 1400-1655 | | |
| 22 | No Observ. | 2229-2400 | | |
| 23 | No Observ. | 0000-0100 | | |
| 24 | No Observ. | 1400-1600 | | |
| 25 | No Observ. | 1400-1600 | | |
| 26 | No Observ. | 1400-1500 | | |
| 27 | No Observ. | 0000-0100 | | |
| | No Observ. | 1400-1500 | | |
| 28 | No Observ. | 1400-1500 | | |
| 29 | No Observ. | 1400-1500 | | |
| 30 | No Observ. | 1400-1500 | | |

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD

9.1 cm



1964 OCTOBER 04

9.1 cm

STANFORD

9.1 cm

1964 OCTOBER 05

9.1 cm

STANFORD

9.1 cm

1964 OCTOBER 06

9.1 cm

STANFORD

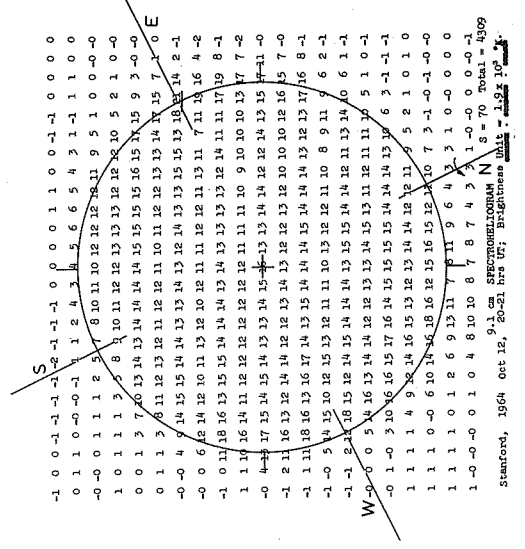
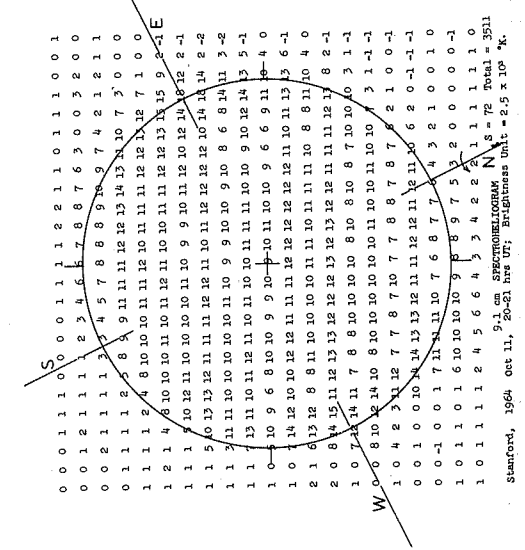
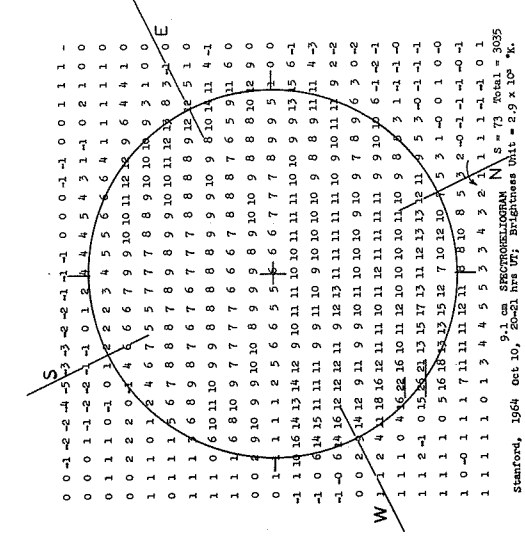
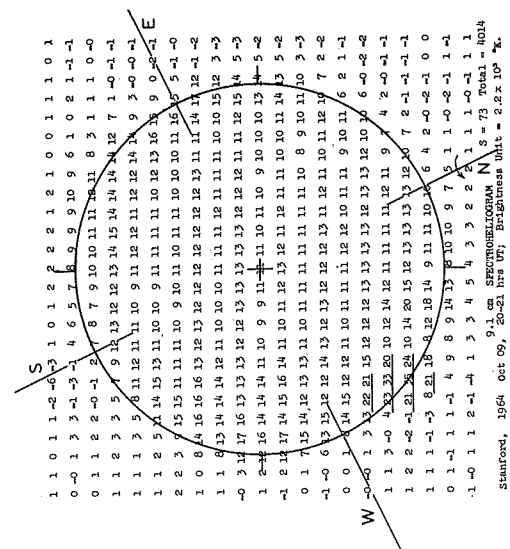
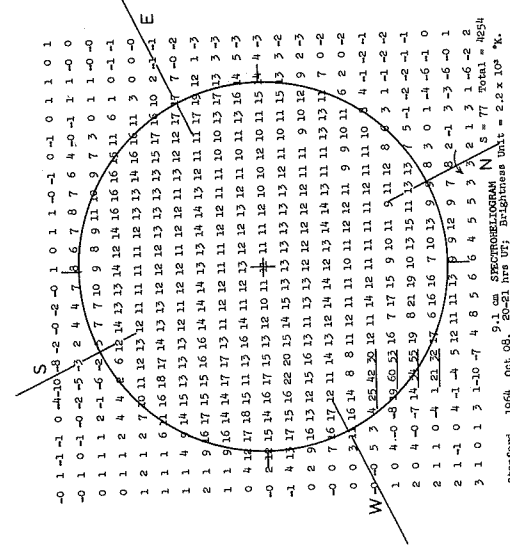
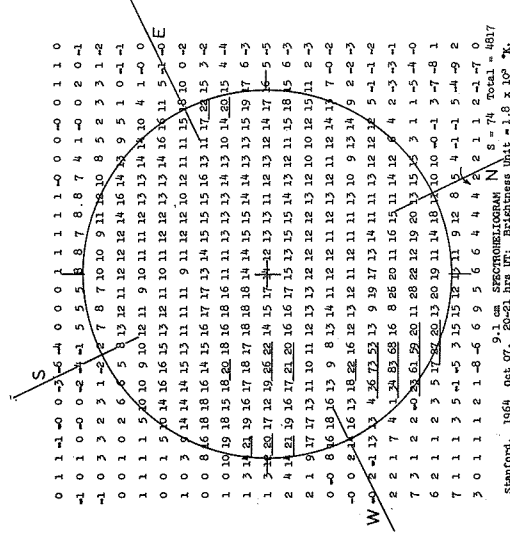
9.1 cm

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD

9.1 cm

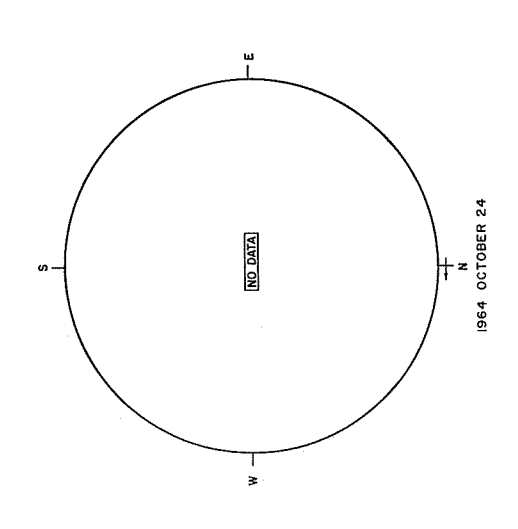
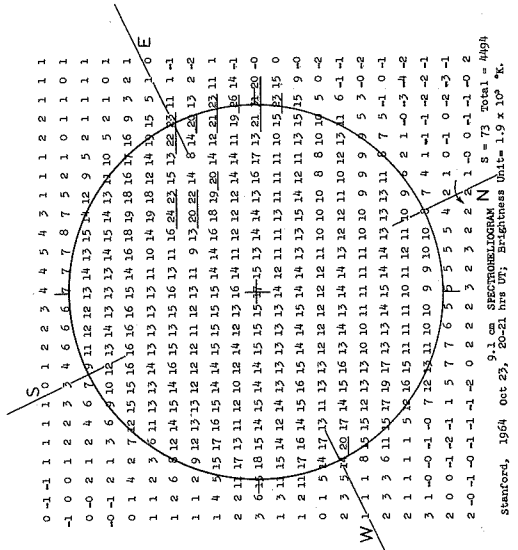
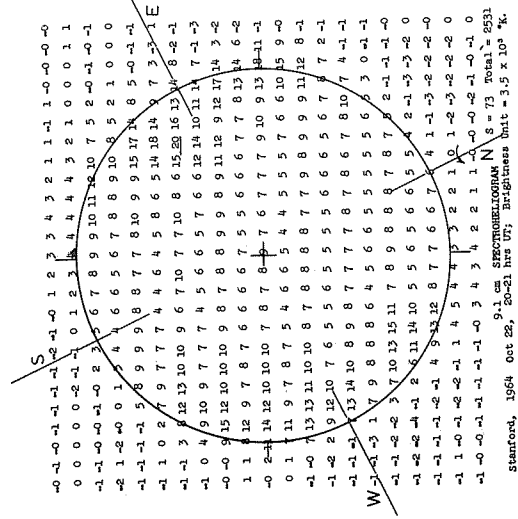
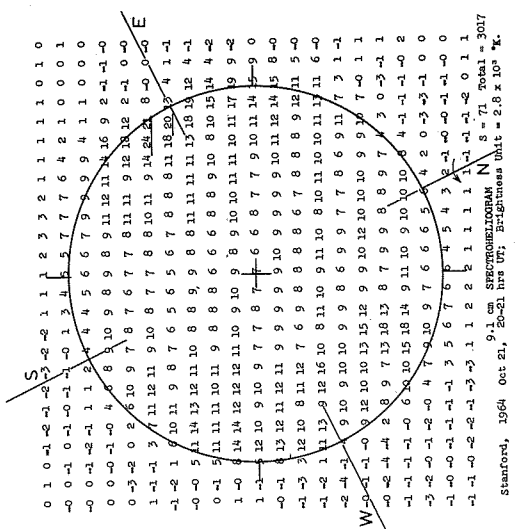
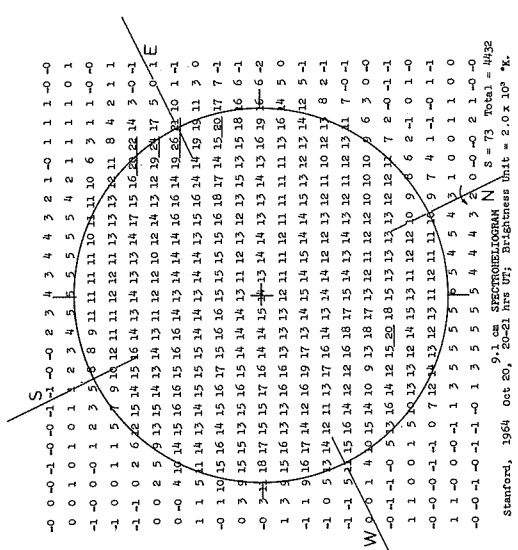
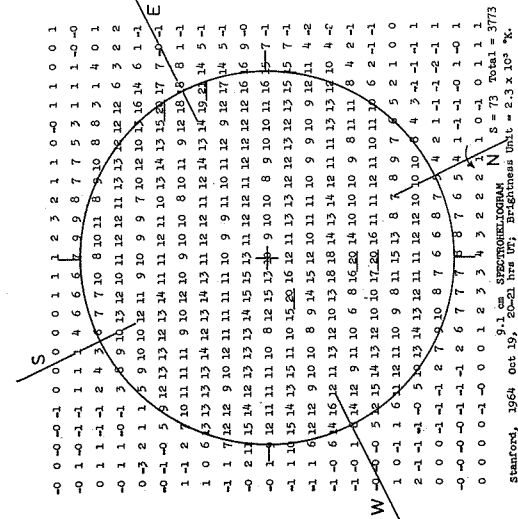


SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD

9.1 cm



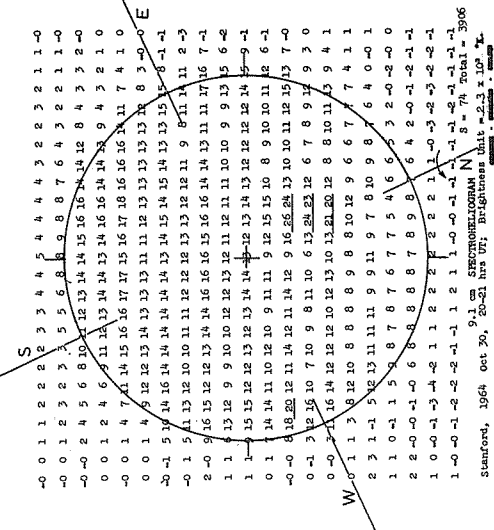
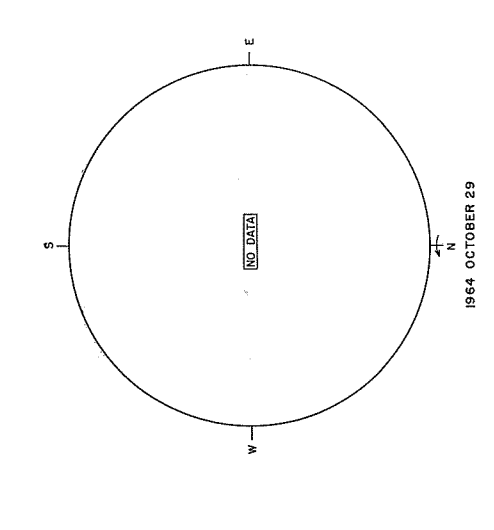
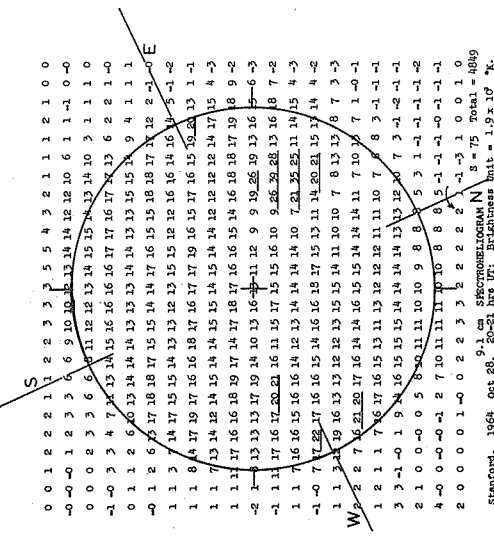
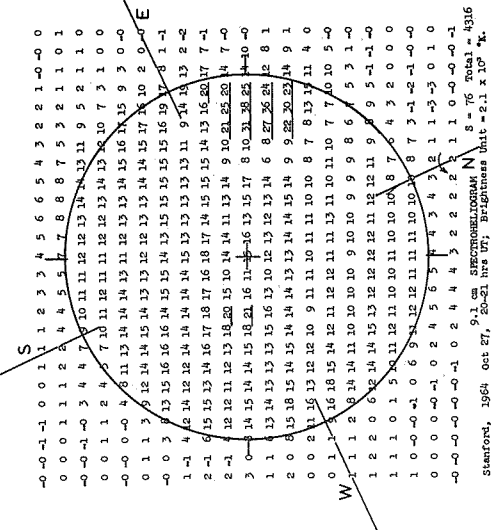
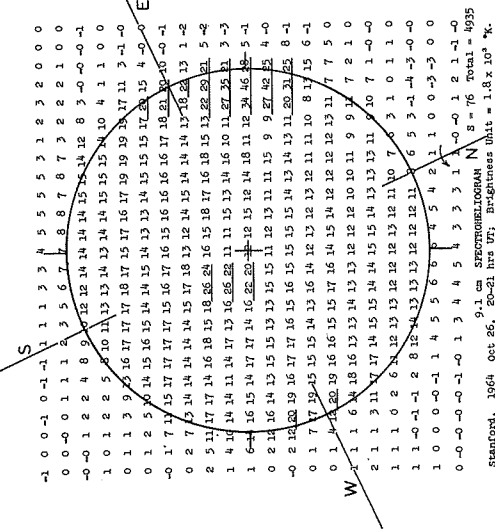
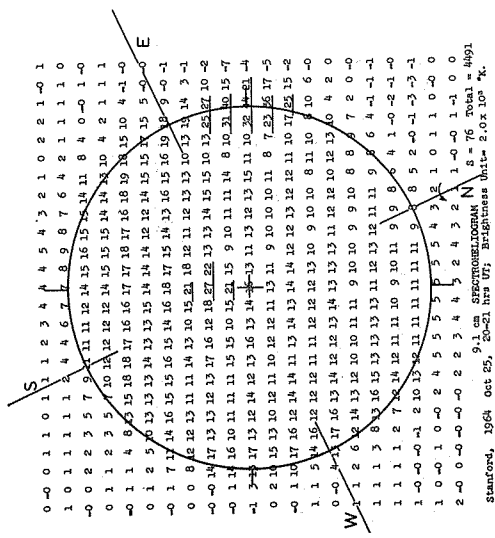
1964 OCTOBER 24

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD

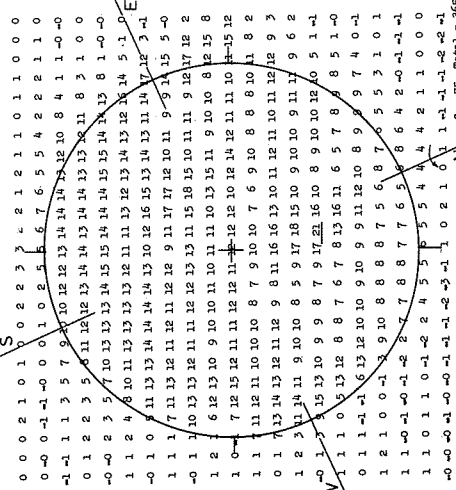
9.1 cm



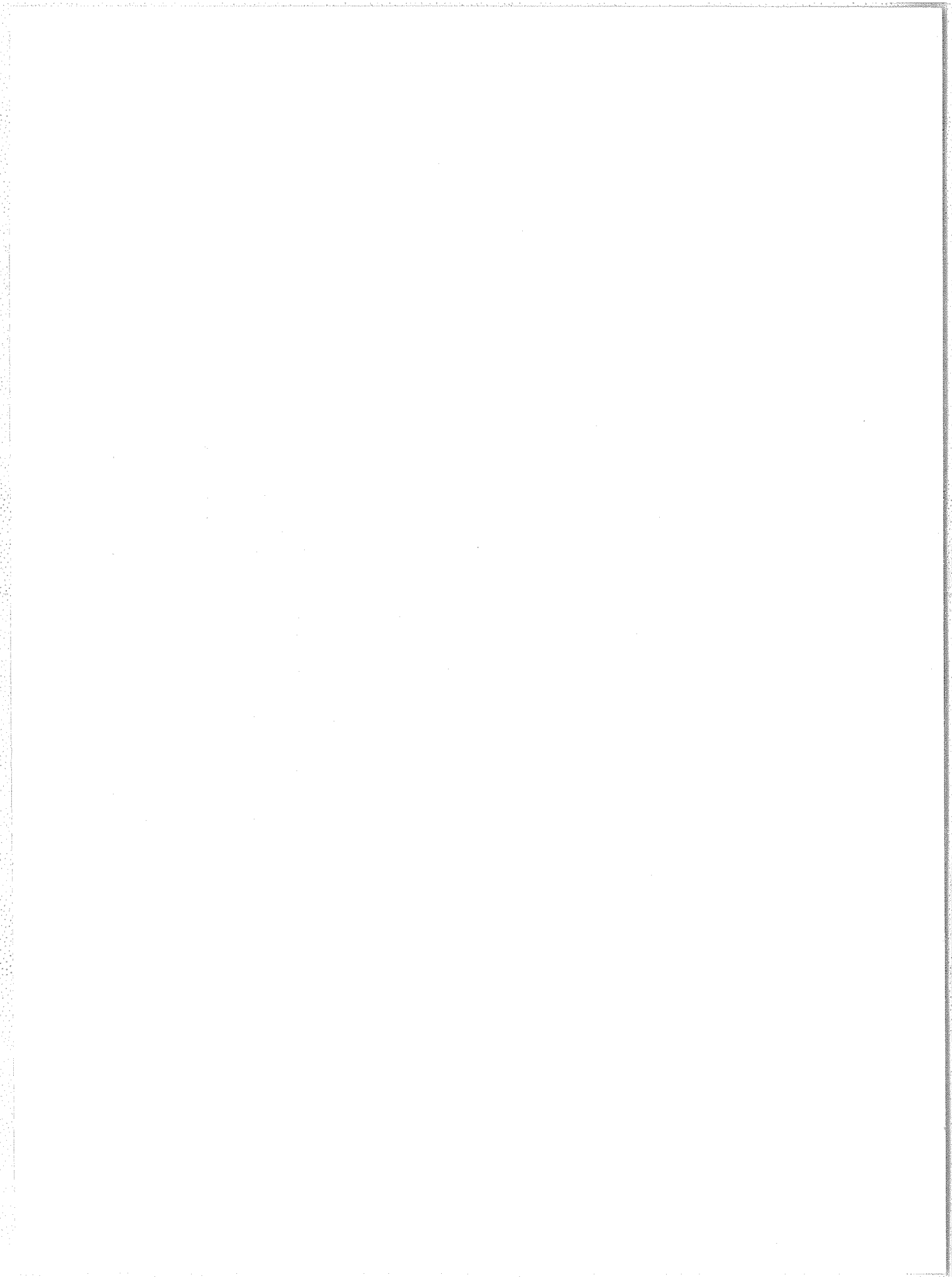
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

OCTOBER 1964

STANFORD



Stanford, 1964 Oct 31, 20-21 hrs UT; Brightness Unit = 2.5×10^7 K.



Va

COSMIC RAY INDICES
(Climax Neutron Monitor)
IGC Station B 305

SEPTEMBER 1964

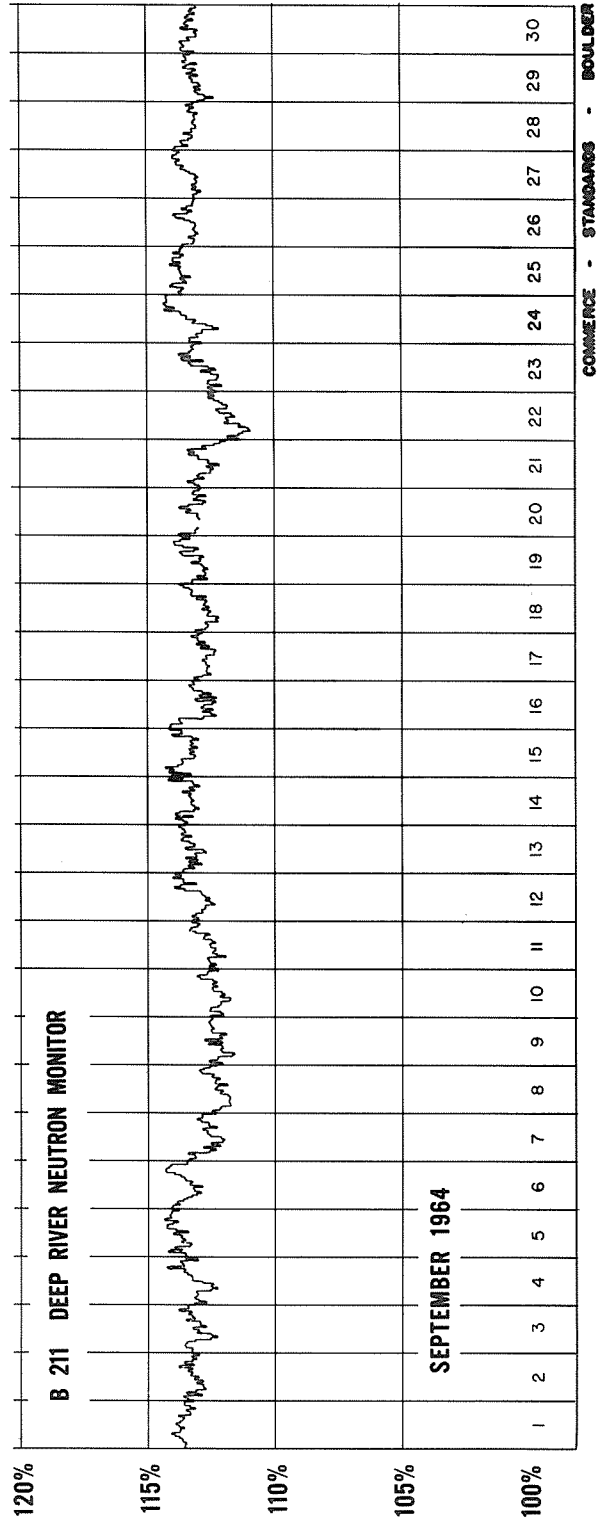
| Sept. 1964 | DAILY AVERAGE COUNTS / HOUR * | Sept. 1964 | DAILY AVERAGE COUNTS / HOUR * |
|---------------|-------------------------------------|---------------|-------------------------------------|
| 1 | 3306.4 **24 | 16 | 3306.9 **36 |
| 2 | 3314.4 | 17 | 3295.9 **36 |
| 3 | 3308.2 | 18 | 3301.1 |
| 4 | 3312.3 | 19 | 3311.5 |
| 5 | 3326.0 | 20 | 3309.6 |
| 6 | 3326.0 | 21 | 3302.5 |
| 7 | 3303.0 | 22 | 3296.5 |
| 8 | 3296.6 | 23 | 3298.0 |
| 9 | 3281.7 | 24 | 3301.2 |
| 10 | 3283.3 | 25 | 3312.1 |
| 11 | 3286.6 | 26 | 3321.4 |
| 12 | 3299.9 | 27 | 3307.3 |
| 13 | 3302.9 | 28 | 3322.2 |
| 14 | 3314.1 | 29 | 3314.5 |
| 15 | 3322.5 **34 | 30 | 3311.4 |

COMMERCE - STANDARDS - BOULDER

* Scaling Factor 128.

** No. of Section Hours Less Than 40 Hours.

COSMIC RAY INDICES
 (Pressure Corrected Hourly Totals)



COSMIC RAY INDICES
DALLAS SUPER NEUTRON MONITOR

DAILY AVERAGE COUNTS PER HOUR *

JANUARY - SEPTEMBER 1964

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|----|--------|-----------|-----------|-----------|-----------|--------|-----------|-----------|-----------|
| 1 | | 6408.5 | 6423.4 | 6481.3 | 6463.5 | 6473.1 | 6504.7 | 6496.2 | 6498.0-8 |
| 2 | | 6419.7 | 6439.7 | 6470.6 | 6453.8 | 6482.3 | 6508.2 | 6487.0 | 6502.0 |
| 3 | | 6420.5 | 6453.1 | 6469.5 | 6468.0 | 6477.3 | 6507.1 | 6509.1 | 6510.7 |
| 4 | | 6425.0 | 6484.3 | 6474.8 | 6476.5 | 6486.0 | 6526.8 | 6508.5 | 6527.1 |
| 5 | | 6430.8 | 6458.4 | 6467.3 | 6457.0 | 6495.9 | 6519.3 | 6498.1-22 | 6539.7 |
| 6 | | 6437.5 | 6435.9 | 6458.9 | 6434.6 | 6493.4 | 6517.3 | 6500.4 | 6534.2 |
| 7 | | 6451.5 | 6429.4 | 6468.7 | 6436.9 | 6491.6 | 6517.5 | 6490.2 | 6502.4 |
| 8 | | 6449.5 | 6410.3 | 6464.0 | 6429.0 | 6476.3 | 6517.8 | 6481.8 | 6486.0 |
| 9 | | 6457.7 | 6442.1 | 6478.0 | 6451.8 | 6442.7 | 6505.8 | 6484.9 | 6485.3 |
| 10 | | 6475.3 | 6463.5 | 6481.9 | 6424.7 | 6434.2 | 6511.3 | 6502.1 | 6482.9 |
| 11 | | 6478.6 | 6455.5-18 | 6462.4 | 6453.1 | 6445.2 | 6521.6 | 6493.7 | 6489.0 |
| 12 | | 6447.4 | 6461.0 | 6447.9 | 6439.4 | 6442.6 | 6521.2 | 6475.7 | 6513.3 |
| 13 | | 6441.7 | 6440.8 | 6473.8 | 6469.9 | 6441.4 | 6533.1 | 6462.8 | 6540.5 |
| 14 | | 6417.3 | 6438.8 | 6462.5 | 6466.6 | 6458.2 | 6538.4 | 6451.3 | 6542.8 |
| 15 | | 6386.1 | 6461.5 | 6472.8 | 6461.1 | 6449.5 | 6539.7 | 6453.4 | 6544.1 |
| 16 | | 6363.8 | 6453.3 | 6466.0 | 6459.6 | - | 6531.3 | 6433.1 | 6498.0 |
| 17 | | 6380.8 | 6429.8 | 6445.0 | 6449.7 | - | 6519.8 | 6445.8 | 6474.3 |
| 18 | | 6402.5 | 6438.6 | 6446.3 | 6461.3 | - | 6505.7 | 6446.2 | 6485.7-21 |
| 19 | | 6437.0-23 | 6429.2-22 | 6442.7 | 6457.3 | 6475.0 | 6489.3 | 6476.4 | 6491.2 |
| 20 | | 6440.3 | 6420.0 | 6442.9 | 6478.1 | 6507.3 | 6503.7 | 6495.0 | 6468.2 |
| 21 | | 6439.5-21 | 6432.2 | 6431.5 | 6472.0 | 6498.9 | 6520.1 | 6490.2 | 6453.7-19 |
| 22 | | 6456.5 | 6431.5 | 6429.6-23 | 6467.8 | 6472.8 | 6521.3 | 6505.6 | 6447.5 |
| 23 | | 6458.9 | 6440.7-23 | 6434.5 | 6480.0 | 6475.8 | 6530.1 | 6496.0 | 6476.0-23 |
| 24 | | 6470.0 | 6461.5-21 | 6429.4 | 6486.7 | 6500.5 | 6535.6 | 6496.0 | 6489.8 |
| 25 | 6451.4 | 6448.3 | 6419.8 | 6428.5 | 6475.8 | 6514.9 | 6512.0 | 6482.4 | 6497.3 |
| 26 | 6453.7 | 6443.8 | 6447.8 | 6446.4 | 6485.0-22 | 6521.7 | 6519.8 | 6497.9-18 | 6484.3 |
| 27 | 6465.8 | 6461.2 | 6456.6 | 6479.6 | 6477.9-22 | 6531.0 | 6515.1 | 6492.3-22 | 6473.5 |
| 28 | 6475.2 | 6476.9 | 6451.5 | 6464.8 | 6480.0 | 6524.8 | 6517.6 | 6477.7 | 6502.6 |
| 29 | 6440.5 | 6439.1 | 6463.0 | 6471.8 | 6474.7 | 6517.9 | 6508.7 | 6488.6 | 6487.8 |
| 30 | 6406.2 | | 6484.2 | 6473.3 | 6469.1 | 6494.9 | 6488.2-22 | 6499.2 | 6521.9 |
| 31 | 6396.1 | | 6471.2 | | 6470.6 | | 6480.3-23 | 6508.7-23 | |

COMMERCE - STANDARDS - BOULDER

* Scaling factor 120

- (Number) Number of hours for which data are available if less than 24.

COSMIC RAY INDICES

Vd

CHURCHILL SUPER NEUTRON MONITOR

DAILY AVERAGE COUNTS PER HOUR *

MAY-SEPTEMBER 1964

| | May | June | July | Aug. | Sept. |
|----|--------|--------|-----------|-----------|--------|
| 1 | 6357.1 | 6427.1 | 6458.9 | 6438.1 | 6467.5 |
| 2 | 6356.0 | 6436.3 | 6473.4 | 6421.9 | 6468.5 |
| 3 | 6372.1 | 6434.1 | 6447.0 | 6471.1 | 6475.6 |
| 4 | 6401.0 | 6445.0 | 6447.7 | 6408.5 | 6496.2 |
| 5 | 6398.3 | 6455.0 | 6448.3 | 6413.5 | 6507.4 |
| 6 | 6401.0 | 6473.3 | 6454.7 | 6433.1 | 6507.8 |
| 7 | 6408.8 | 6473.3 | 6439.8 | 6405.2-23 | 6444.9 |
| 8 | 6431.8 | 6445.1 | 6387.7 | 6421.3 | 6435.7 |
| 9 | 6455.5 | 6414.9 | 6386.9 | 6446.2 | 6429.3 |
| 10 | 6440.5 | 6372.7 | 6407.0 | 6460.3-21 | 6442.3 |
| 11 | 6376.1 | 6391.4 | 6400.6 | 6425.0-23 | 6460.4 |
| 12 | 6393.0 | 6380.1 | 6413.8 | 6418.0 | 6472.7 |
| 13 | 6393.5 | 6413.5 | 6417.6 | 6423.2-22 | 6490.2 |
| 14 | 6388.1 | 6432.7 | 6417.7 | 6415.5 | 6475.9 |
| 15 | 6406.8 | 6415.4 | 6433.0 | 6422.0 | 6472.6 |
| 16 | 6386.8 | 6410.0 | 6447.9 | 6423.9 | 6475.4 |
| 17 | 6373.8 | 6437.3 | 6445.7 | 6427.7 | 6456.6 |
| 18 | 6396.5 | 6448.2 | 6391.5 | 6432.3 | 6444.8 |
| 19 | 6392.7 | 6426.1 | 6383.0 | 6438.1 | 6480.8 |
| 20 | 6412.5 | 6444.9 | 6402.5 | 6457.5 | 6495.4 |
| 21 | 6416.1 | 6406.8 | 6416.6 | 6476.6 | 6485.3 |
| 22 | 6435.5 | 6392.5 | 6404.9 | 6474.2 | 6436.3 |
| 23 | 6444.8 | 6425.9 | 6415.5 | 6493.0 | 6470.8 |
| 24 | 6419.6 | 6429.3 | 6457.3-21 | 6510.6 | 6483.3 |
| 25 | 6420.0 | 6447.2 | 6439.2 | 6499.0 | 6495.7 |
| 26 | 6409.5 | 6447.9 | 6455.7 | 6492.3 | 6502.1 |
| 27 | 6408.7 | 6429.8 | 6454.8 | 6503.5 | 6518.1 |
| 28 | 6408.0 | 6428.0 | 6474.8 | 6487.0 | 6507.8 |
| 29 | 6404.7 | 6440.7 | 6474.2 | 6482.1 | 6506.8 |
| 30 | 6421.0 | 6454.9 | 6436.3 | 6480.8 | 6505.3 |
| 31 | 6409.5 | | 6434.3 | 6482.6 | |

COMMERCE - STANDARDS - BOULDER

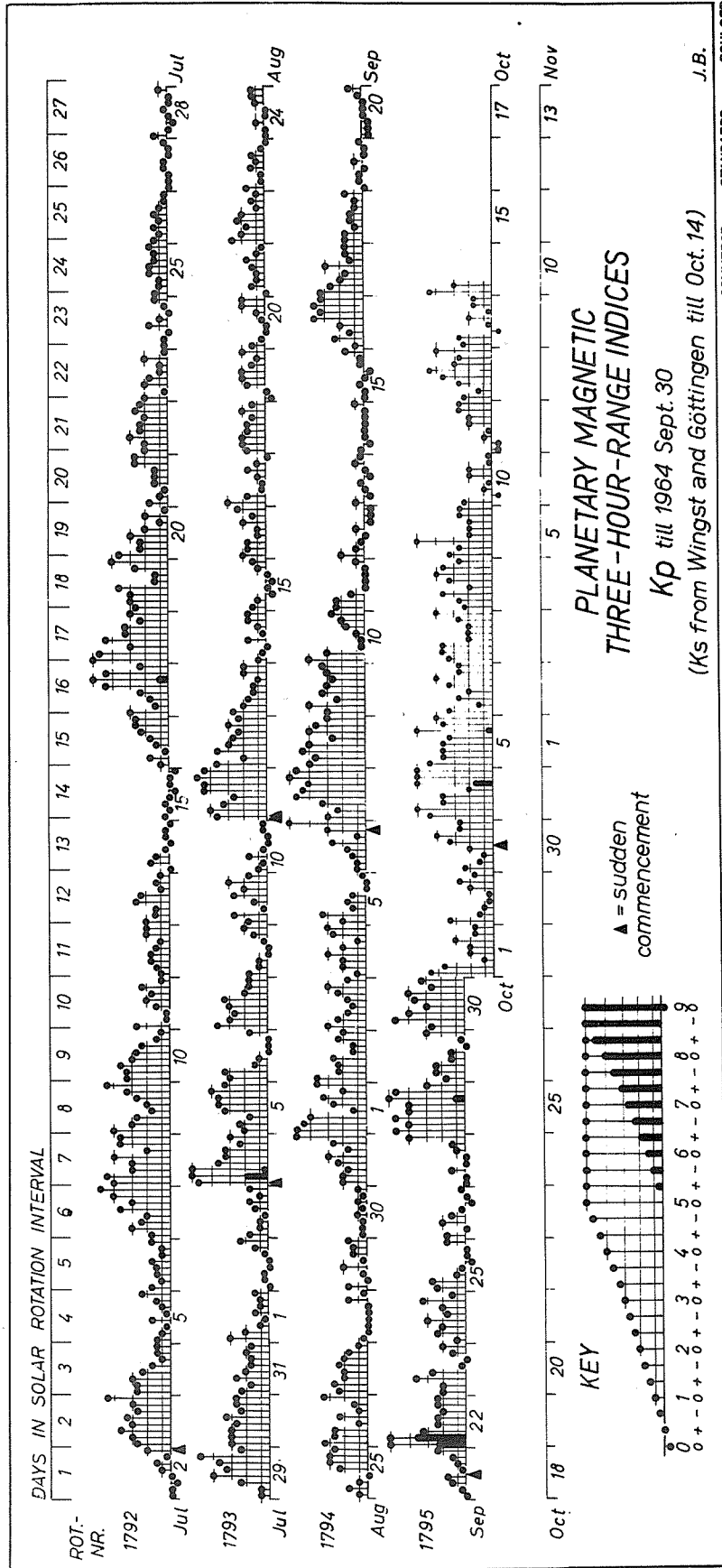
* Scaling factor 120.

- (Number) Number of hours for which data are available if less than 24.

GEOMAGNETIC ACTIVITY INDICES

SEPTEMBER 1964

| Sept. 1964 | C | Values Kp | | | | | | | | Sum | Ap | Final Selected Days |
|---------------|------|-------------------------|----|----|----|----|----|----|----|-------|----|---------------------------|
| | | Three hour Gr. interval | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| 1 | 1.0 | 5- | 4+ | 4o | 1+ | 3- | 3+ | 2o | 4- | 26o | 20 | Five Quiet |
| 2 | 0.6 | 4- | 2+ | 2+ | 3- | 1+ | 1+ | 2+ | 2o | 18o | 10 | |
| 3 | 0.6 | 3o | 2+ | 2- | 1+ | 2- | 2+ | 3o | 2- | 17o | 9 | |
| 4 | 0.6 | 1o | 2o | 2o | 3o | 2o | 1o | 3- | 3o | 17- | 9 | |
| 5 | 0.3 | 2o | 3+ | 1+ | 2- | 1+ | 0+ | 0+ | 1- | 11o | 6 | |
| 6 | 0.8 | 1o | 1o | 1+ | 2- | 3- | 1o | 3o | 5o | 17- | 12 | |
| 7 | 1.4 | 3o | 2+ | 3+ | 5- | 4+ | 4o | 5o | 5- | 31+ | 28 | |
| 8 | 1.2 | 4o | 4- | 4+ | 4o | 3- | 4o | 4- | 3o | 29+ | 23 | |
| 9 | 0.9 | 3o | 4o | 2+ | 3+ | 3o | 3- | 3o | 3+ | 25- | 16 | |
| 10 | 0.6 | 4o | 3o | 1- | 1- | 1o | 2- | 2o | 3- | 16- | 10 | |
| 11 | 0.1 | 2+ | 2+ | 1+ | 0+ | 0+ | 0+ | 0+ | 1o | 8+ | 4 | Five Disturbed |
| 12 | 0.1 | 2o | 1o | 1- | 0+ | 1o | 0o | 0o | 0o | 5o | 2 | |
| 13 | 0.1 | 1o | 0o | 0+ | 1- | 0o | 0+ | 1o | 1- | 4o | 2 | |
| 14 | 0.1 | 1- | 0o | 0+ | 0+ | 0+ | 0+ | 0+ | 1o | 3+ | 2 | |
| 15 | 0.0 | 0+ | 0+ | 1- | 0+ | 0o | 1- | 1- | 2- | 5- | 3 | |
| 16 | 0.9 | 1o | 2+ | 1+ | 2o | 4- | 3+ | 4- | 3+ | 21- | 13 | |
| 17 | 0.5 | 3+ | 3- | 2o | 2- | 3o | 1+ | 2- | 2- | 17+ | 9 | |
| 18 | 0.2 | 2- | 2- | 1o | 1+ | 1+ | 1o | 1o | 2- | 11- | 5 | |
| 19 | 0.0 | 0+ | 1- | 1- | 0+ | 1o | 0+ | 0+ | 1- | 4+ | 3 | |
| 20 | 0.1 | 0o | 0o | 0o | 0+ | 0+ | 0+ | 1- | 1+ | 3o | 2 | |
| 21 | 0.3 | 0+ | 1- | 1+ | 2- | 1- | 1o | 1+ | 2+ | 9+ | 5 | Ten Quiet |
| 22 | 1.4 | 7- | 8- | 3+ | 2+ | 2+ | 2o | 2+ | 2+ | 29o | 44 | |
| 23 | 0.4 | 2o | 2o | 4- | 3- | 1- | 0+ | 1+ | 2o | 15- | 8 | |
| 24 | 0.8 | 1o | 2+ | 2o | 3o | 2- | 2o | 3+ | 1+ | 17- | 9 | |
| 25 | 0.1 | 2+ | 3- | 1o | 1- | 0o | 0+ | 0+ | 2- | 9o | 5 | |
| 26 | 0.1 | 2- | 0+ | 2o | 1+ | 1- | 0o | 0+ | 1- | 7o | 4 | |
| 27 | 0.4 | 0+ | 0+ | 1+ | 0+ | 0+ | 1o | 1+ | 4o | 9o | 6 | |
| 28 | 1.4 | 5- | 4o | 5- | 4o | 4o | 6- | 5- | 3o | 35- | 35 | |
| 29 | 0.4 | 2- | 2+ | 2+ | 1+ | 1+ | 0+ | 1- | 3o | 13o | 7 | |
| 30 | 1.0 | 3- | 5- | 4o | 3o | 4- | 4o | 3- | 3+ | 28o | 22 | |
| Mean: | 0.55 | | | | | | | | | Mean: | 11 | |



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

SEPTEMBER 1964

| SEPT 1964 | NORTH ATLANTIC | | | | | | | | | | NORTH PACIFIC | | | | | | | | | | | |
|--------------------|---|----|----|----|---|----|-----------------------|---|----|-------------------------------|--|------------------------|------------------------|---------------------------------------|----|-----------------------|---|------------------------|-------------------------------|------------------------|------------------------|--|
| | NORTH ATLANTIC 6-HOURLY QUALITY FIGURES | | | | SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF: | | WHOLE DAY INDEX | ADVANCE FORECASTS (4-REPORTS) FOR WHOLE DAY: ISSUED IN ADVANCE BY: | | GEOMAGNETIC K _p | NORTH PACIFIC 8-HOURLY QUALITY FIGURES | | | SHORT-TERM FORECASTS ISSUED AT: | | WHOLE DAY INDEX | ADVANCE FORECASTS (4-REPORTS) FOR WHOLE DAY: ISSUED IN ADVANCE BY: | | GEOMAGNETIC K _p | | | |
| | 00 | 06 | 12 | 18 | 00 | 06 | | 12 | 18 | | DAYS J ₂ | DAYS J ₃ | DAYS J ₄ | 02 | 08 | | 18 | DAYS J ₂ | | DAYS J ₃ | DAYS J ₄ | |
| 01 | 6- | 5- | 7- | 6+ | 6 | 5 | 6 | 6 | 6- | 5 | 3 | 3 | 5 | 7 | 7 | 6 | 5 | 6 | 3 | 2 | | |
| 02 | 5+ | 6- | 6+ | 6+ | 6 | 5 | 7 | 7 | 60 | 6 | 3 | 1 | 6 | 6 | 7 | 6 | 6 | 4 | 2 | 1 | | |
| 03 | 6+ | 60 | 7- | 7- | 6 | 5 | 7 | 7 | 6+ | 6 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 6 | 2 | 1 | | |
| 04 | 6+ | 60 | 7- | 6+ | 6 | 5 | 7 | 7 | 60 | 6 | 3 | 0 | 6 | 5 | 7 | 6 | 6 | 6 | 2 | 1 | | |
| 05 | 6- | 6- | 7- | 6+ | 6 | 5 | 7 | 7 | 60 | 7 | 7 | 7 | 5 | 5 | 7 | 6 | 5 | 7 | 2 | 1 | | |
| 06 | 60 | 60 | 7- | 7- | 6 | 6 | 7 | 7 | 6+ | 7 | 7 | 3 | 6 | 6 | 6 | 6 | 6 | 7 | 1 | 2 | | |
| 07 | 6+ | 5+ | 6+ | 7- | 5 | 5 | 7 | 6 | 60 | 6 | 6 | 3 | 5 | 4 | 5 | 6 | 5 | 5 | 3 | 3 | | |
| 08 | 40 | 3- | 7- | 7- | 5 | 3 | 5 | 6 | 50 | 6 | 6 | (4) | 5 | 5 | 6 | 6 | 5 | 5 | (4) | 2 | | |
| 09 | 5- | 4+ | 6+ | 7- | 5 | 4 | 6 | 7 | 6- | 6 | 3 | 2 | 4 | 4 | 6 | 6 | 5 | 5 | 3 | 2 | | |
| 10 | 4+ | 4+ | 6+ | 7- | 5 | 5 | 7 | 6 | 5+ | 5 | 1 | 2 | 4 | 4 | 6 | 5 | 5 | 5 | 2 | 1 | | |
| 11 | 60 | 5+ | 7- | 6+ | 5 | 5 | 7 | 7 | 60 | 6 | 2 | 0 | 6 | 5 | 6 | 5 | 6 | 6 | 2 | 0 | | |
| 12 | 60 | 6- | 6+ | 7- | 6 | 5 | 7 | 7 | 60 | 6 | 1 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 1 | 0 | | |
| 13 | 5+ | 50 | 6+ | 6+ | 6 | 5 | 7 | 7 | 60 | 7 | 7 | 1 | 6 | 5 | 6 | 6 | 6 | 6 | 0 | 0 | | |
| 14 | 6- | 5+ | 7- | 70 | 6 | 6 | 7 | 7 | 6+ | 7 | 7 | 0 | 6 | 5 | 6 | 6 | 6 | 7 | 0 | 0 | | |
| 15 | 60 | 50 | 7- | 7- | 6 | 6 | 7 | 7 | 6+ | 7 | 7 | 1 | 5 | 5 | 7 | 6 | 6 | 7 | 0 | 1 | | |
| 16 | 5+ | 5+ | 7- | 70 | 6 | 5 | 7 | 7 | 60 | 6 | 2 | 3 | 6 | 5 | 7 | 6 | 6 | 6 | 2 | 3 | | |
| 17 | 6- | 6- | 7- | 70 | 6 | 5 | 7 | 7 | 60 | 6 | 2 | 2 | 5 | 6 | 7 | 6 | 6 | 6 | 2 | 2 | | |
| 18 | 50 | 50 | 7- | 7- | 6 | 5 | 7 | 7 | 60 | 6 | 1 | 2 | 5 | 6 | 6 | 6 | 6 | 6 | 1 | 0 | | |
| 19 | 5+ | 50 | 7- | 70 | 6 | 5 | 7 | 7 | 60 | 6 | 6 | 0 | 4 | 5 | 6 | 6 | 5 | 6 | 0 | 0 | | |
| 20 | 6- | 6- | 7- | 7- | 6 | 5 | 7 | 7 | 60 | 6 | 0 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 0 | 0 | | |
| 21 | 6+ | 6- | 7- | 7- | 6 | 6 | 7 | 7 | 6+ | 6 | 1 | 2 | 5 | 6 | 6 | 6 | 5 | 6 | 1 | 0 | | |
| 22 | 4+ | 50 | 6+ | 6+ | 5 | 2 | 6 | 6 | 6- | 6 | (5) | 2 | 5 | 5 | 6 | 6 | 6 | 6 | (5) | 1 | | |
| 23 | 6- | 4+ | 7- | 70 | 5 | 5 | 6 | 7 | 60 | 6 | 2 | 1 | 5 | 5 | 7 | 6 | 6 | 6 | 2 | 1 | | |
| 24 | 6- | 5- | 7- | 6+ | 6 | 6 | 7 | 7 | 6- | 6 | 2 | 2 | 5 | 4 | 7 | 6 | 5 | 5 | 2 | 1 | | |
| 25 | 5- | 6- | 7- | 7- | 6 | 5 | 7 | 7 | 60 | 6 | 2 | 1 | 5 | 5 | 7 | 6 | 6 | 6 | 2 | 0 | | |
| 26 | 5- | 60 | 7- | 7- | 6 | 5 | 7 | 7 | 60 | 6 | 2 | 1 | 5 | 5 | 7 | 6 | 6 | 6 | 2 | 1 | | |
| 27 | 5+ | 60 | 7- | 6+ | 5 | 5 | 7 | 7 | 60 | 5 | 1 | 2 | 5 | 5 | 7 | 6 | 5 | 5 | 1 | 1 | | |
| 28 | 5+ | 5- | 6+ | 60 | 5 | 5 | 6 | 6 | 6- | 5 | (4) | (4) | 4 | 4 | 6 | 4 | 4 | 5 | (4) | (4) | | |
| 29 | 4+ | 50 | 7- | 7- | 5 | 5 | 6 | 7 | 6- | 5 | 2 | 2 | 4 | 5 | 7 | 4 | 5 | 5 | 2 | 2 | | |
| 30 | 5+ | 50 | 6+ | 7- | 5 | 5 | 7 | 6 | 60 | 6 | 3 | 3 | 5 | 4 | 7 | 5 | 4 | 6 | 3 | 2 | | |
| Score: | Quiet Periods | | | | 16 | 12 | 20 | 19 | 20 | 20 | | | | | 9 | 10 | 15 | 13 | | | | |
| | S | | | | 10 | 13 | 9 | 11 | 10 | 10 | | | | | 17 | 14 | 14 | 12 | | | | |
| | U | | | | 0 | 1 | 1 | 0 | 0 | 0 | | | | | 0 | 0 | 0 | 1 | | | | |
| | F | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 1 | 1 | | | | |
| | P | | | | 0 | 2 | 0 | 0 | 0 | 0 | | | | | 1 | 2 | 0 | 0 | | | | |
| | S | | | | 4 | 2 | 0 | 0 | 0 | 0 | | | | | 1 | 2 | 0 | 2 | | | | |
| | U | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 | 0 | | | | |
| | F | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 2 | 2 | 0 | 1 | | | | |
| Disturbed Periods: | | | | | | | | | | | | | | | | | | | | | | |

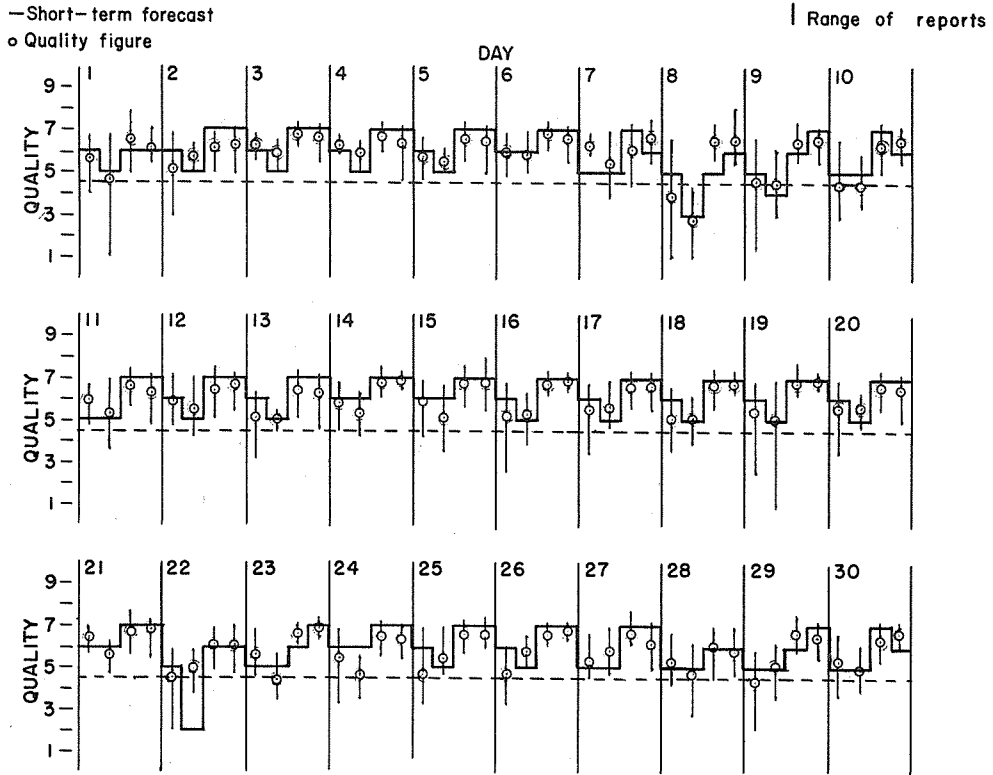
CRPL - STANBURY - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

VII b

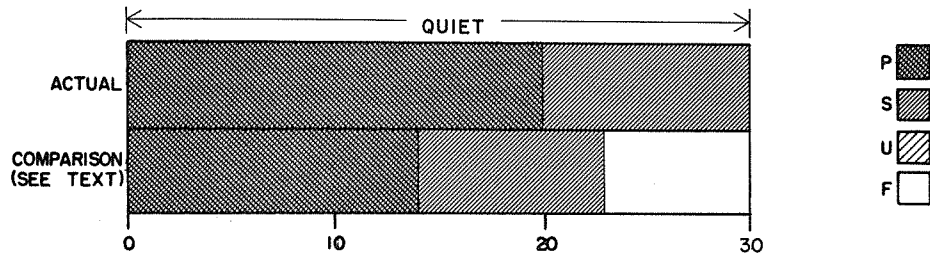
NORTH ATLANTIC

SEPTEMBER 1964

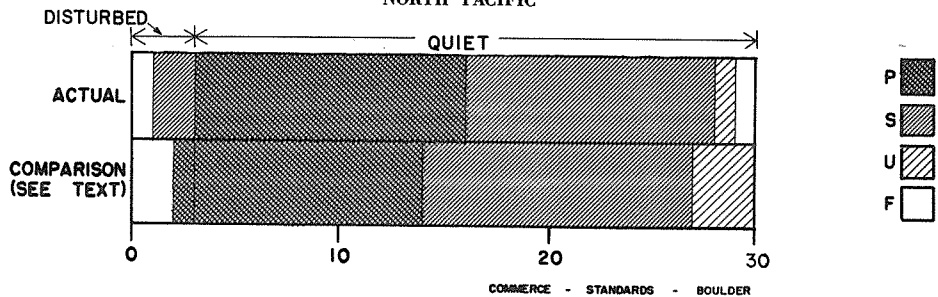


OUTCOME OF ADVANCE FORECASTS--FINAL ESTIMATES (1 TO 7 DAYS AHEAD)

NORTH ATLANTIC

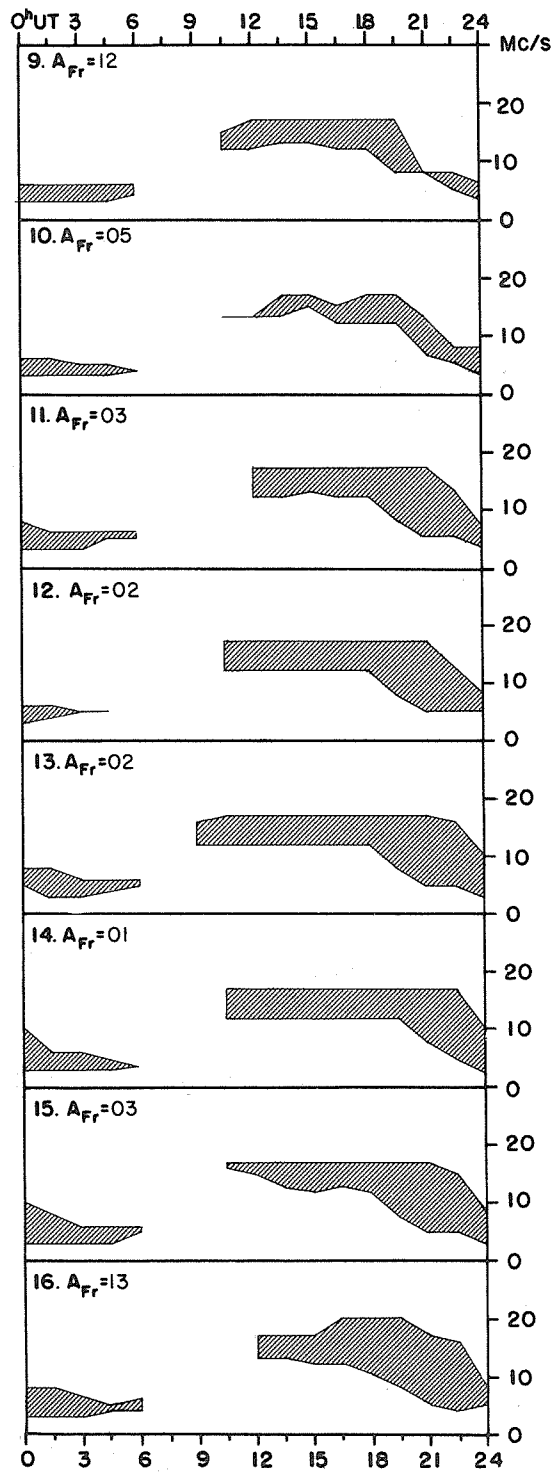
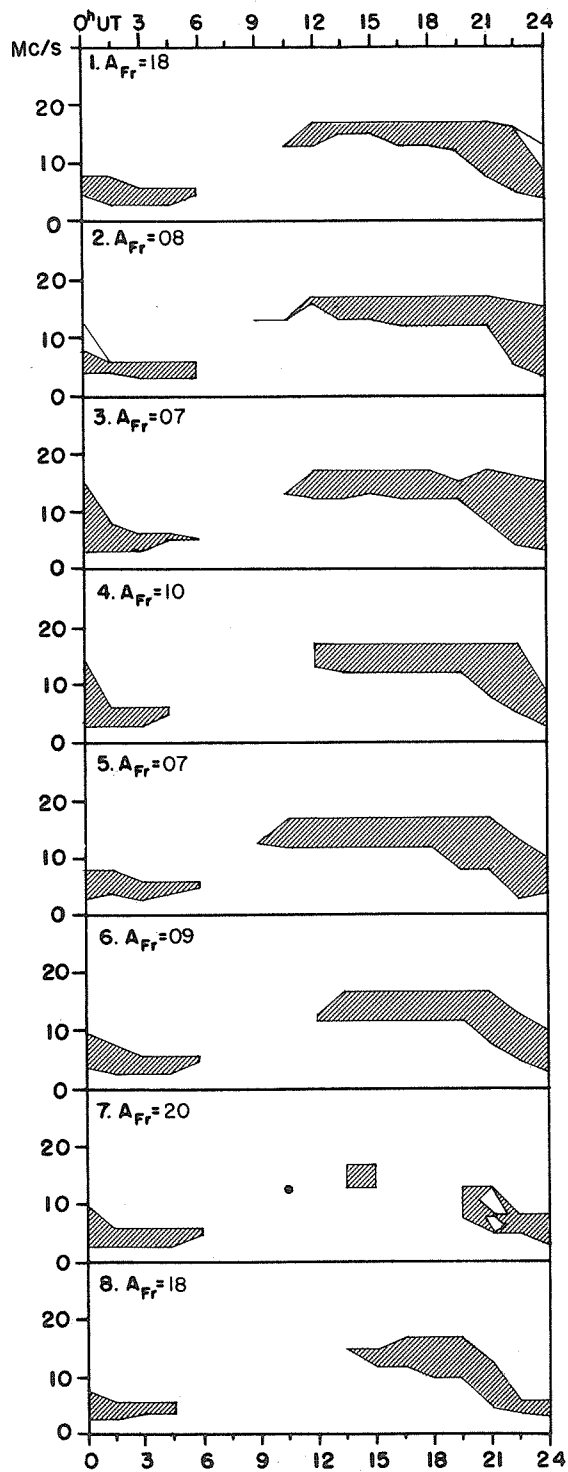


NORTH PACIFIC



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

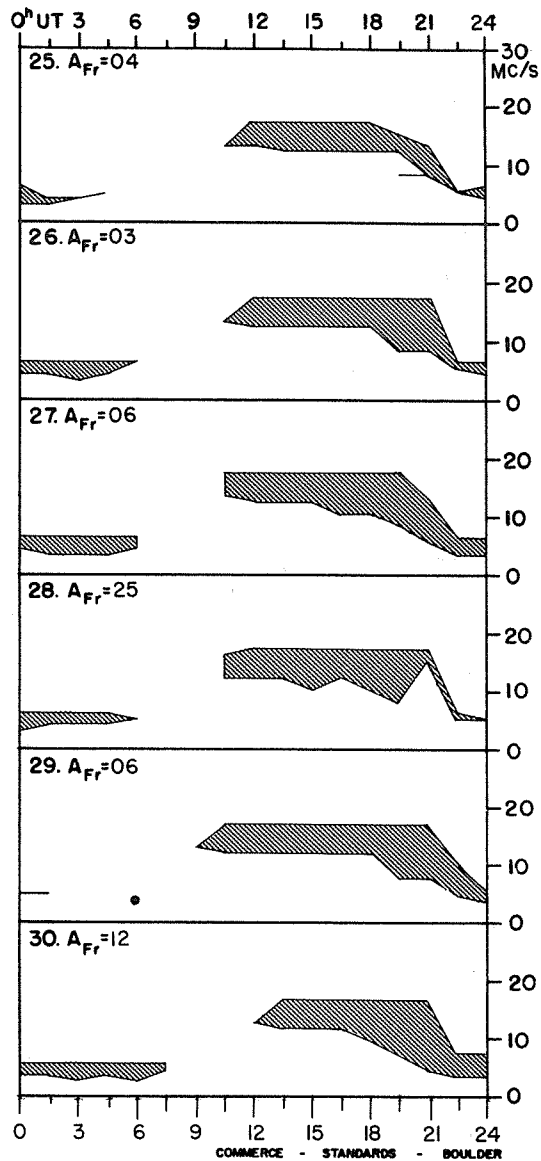
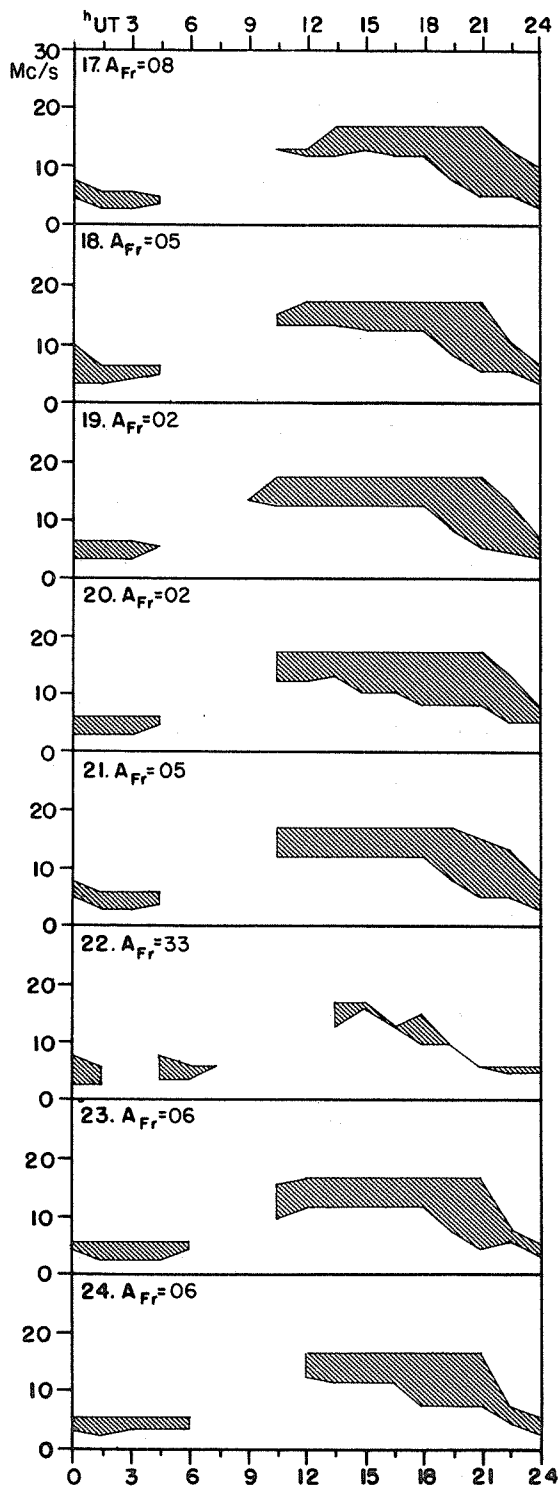
SEPTEMBER 1964



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

VII d

SEPTEMBER 1964



Adapted from Observations by Deutsches Bundespost

IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

OCTOBER 1964

| OCT. 1964 | TIME OF ISSUE UT | ADVANCE GEOPHYSICAL ALERT | WORLDWIDE GEOPHYSICAL ALERT | | | |
|--------------|------------------------|------------------------------|-----------------------------|--------------------------------------|------------------|--|
| | | | NO. | TYPE | TIMING | ELABORATION |
| 1 | 0400 | | 116 | Stratospheric Warming | Ends | Advance stage of 10 MB stratospheric warming reached |
| 4 | 0400 | | 117 | Magnetic Storm | Expected | |
| 5 | 0400 | | 118 | Magnetic Storm | Expected | |
| 7 | 0400 | | 119 | Solar Activity Stratospheric Warming | Exists Exists | Reestablished over Mirny Davis region |
| 7 | 1715 | Climax, Solar Flare 07/1500Z | | | | |
| 8 | 0400 | | 120 | Solar Activity Stratospheric Warming | Exists Exists | From Davis-Mirny to McMurdo-Pole area |
| 9 | 0400 | | 121 | Solar Activity Stratospheric Warming | Exists Exists | Over McMurdo-Vostok-Pole region |
| 10 | 0400 | | 122 | Stratospheric Warming | Exists | Over eastern Antarctica moving Byrd |
| 11 | 0400 | | 123 | Stratospheric Warming | Exists | Near Durville region |
| 12 | 0400 | | 124 | Stratospheric Warming | Exists | Near Durville-McMurdo region |
| 13 | 0400 | | 125 | Stratospheric Warming | Exists | Durville-McMurdo-Pole region |
| 14 | 0400 | | 126 | Stratospheric Warming | Exists | Mirny-Pole-Byrd region |
| 16 | 0400 | | 127 | Stratospheric Warming | Exists | Antarctica |
| 17 | 0400 | | 128 | Stratospheric Warming | Exists | Antarctica |
| 18 | 0400 | | 129 | Stratospheric Warming | Exists | Antarctica |
| 19 | 0400 | | 130 | Stratospheric Warming | Exists | Antarctica |
| 20 | 0400 | | 131 | Stratospheric Warming | Exists | Antarctica |
| 21 | 0400 | | 132 | Stratospheric Warming | Exists | Antarctica |
| 22 | 0400 | | 133 | Stratospheric Warming | Exists | Antarctica |
| 23 | 0400 | | 134 | Stratospheric Warming | Exists | Antarctica 20 millibar temperature minus eight degrees centigrade Pole-Vostok region |
| 24 | 0400 | | 135 | Stratospheric Warming | Exists | Antarctica |
| 25 | 0400 | | 136 | Stratospheric Warming | Exists | Antarctica |
| 26 | 0400 | | 137 | Stratospheric Warming | Exists | Antarctica |
| 27 | 0400 | | 138 | Stratospheric Warming | Exists | Antarctica |
| 28 | 0400 | | 139 | Stratospheric Warming | Ends | Antarctica Stratospheric Warm entire continent |