

HFUS-1 BOU 201230

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 201A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 1300Z 20 JULY 1981

I A. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM

19/1200Z TO 20/1200Z:

SOLAR ACTIVITY HAS BEEN LOW DURING THE PAST 24 HOURS. SEVERAL C-CLASS EVENTS HAVE OCCURRED DURING THIS PERIOD. REGION 3220 (N08W47) HAS PRODUCED THE LARGEST EVENTS A C5/SN 19/1436UT, A C5/SN 19/1502UT AND A C6/SB 19/1731UT. OTHER REGIONS THAT HAVE PRODUCED C-CLASS EVENTS ARE 3203 (S07W81), 3204 (S28W73), 3221 (S08E50) AND 3224 (N16E19). REGIONS 3203 AND 3204 ARE REPORTED TO BE DECAYING RAPIDLY. REGION 3224 HAS EXHIBITED RAPID GROWTH, HOWEVER IT REMAINS SIMPLE MAGNETICALLY.

I B. SOLAR ACTIVITY FORECAST:

SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH. REGION 3221 IS NOW A LARGE, 1700 MILLIONTHS, STABLE COMPLEX REGION CAPABLE OF X-CLASS ACTIVITY, IF RAPID GROWTH OR DECAY OCCURS. REGIONS 3203 AND 3204 MAY PRODUCE A LARGE M-CLASS EVENT OR A SMALL X-CLASS EVENT IF RAPID CHANGE CONTINUES. REGION 3224 LOOKS CAPABLE OF AN ISOLATED M-CLASS EVENT.

II. GEOPHYSICAL SUMMARY AND FORECAST:

THE GEOMAGNETIC FIELD HAS BEEN GENERALLY UNSETTLED DURING THE PERIOD. THE GEOMAGNETIC FIELD IS EXPECTED TO BE UNSETTLED UNTIL 22 JULY WHEN THE EFFECTS OF A SMALL CORONAL HOLE, NOW TWO DAYS PAST CENTRAL MEDIAN, SHOULD CAUSE MINOR ACTIVE CONDITIONS FOR THE REST OF THE FORECAST PERIOD. SEVERAL FILAMENTS, IN THE EASTERN PORTION OF THE VISIBLE DISK, DISAPPEARED AFTER THE X2 EVENT OF 19 JULY, HOWEVER LITTLE EFFECT IN THE GEOMAGNETIC FIELD IS EXPECTED.

III. EVENT PROBABILITIES: 21 - 23 JULY

CLASS M 95/95/95

CLASS X 40/40/40

PROTON 10/10/15

PCAF YELLOW

IV. OTTAWA 10.7 FLUX

OBSERVED 18 JUL 214

ESTIMATED 20 JUL 222

PREDICTED 21-23 JUL 214/200/200

90 DAY MEAN 19 JUL 177

V. GEOMAGNETIC A INDICES

OBSERVED AFR 18 JUL 26 AP 19 JUL 11

ESTIMATED AFR 19 JUL 10 AFR/AP 20 JUL 10/12

PREDICTED AFR/AP 21-23 JUL 10/10 18/20 15/15

SOLTERWARN

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HFUS 3 BOU 202200

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLORADO

SDF NUMBER 201B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200Z 20 JULY 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 20/1200Z TO 20/2100Z: SOLAR ACTIVITY HAS BEEN MODERATE. REGION 3204 (S08W79) PRODUCED A M5/1B PROTON FLARE AT 1329Z (X-RAY MAX). A 650 FLUX UNIT BURST AT 2695 MHZ, TYPE II DEKAMERIC BURST, AND SHORT WAVE FADE THROUGH 22 MHZ, ACCCOMPANIED THIS FLARE. AN EXTENSIVE LOOP PROMINENCE ARCADE FORMED AFTER FLARE MAXIMUM. REGION 3219 (S08W74) PRODUCED A M3/SN AT 1734Z (X-RAY MAX) WITH MINOR CENTIMERIC BURSTS AND MODERATE SHORT WAVE FADE. FLARE BRIGHT MATERIAL ROSE TO ABOUT 0.1R ABOVE THE FLARE SITE. A VERY LARGE U SHAPED FILAMENT IN THE SOUTHWEST QUADRANT, EAST OF REGION 3204, DISRUPTED SOMETIME AFTER 1400Z. THIS WAS FOLLOWED BY AN EXTENSIVE RIBBONED HYDER FLARE, PROBABLY AN IMP 3N OPTICAL FLARE. UNFORTUNATELY, NO DEFINITIVE INFORMATION IS AVAILABLE. REGION 3221 (S07E43) REMAINS WITH A LARGE SUNSPOT STRUCTURE. CURRENT LACK OF ANYTHING BUT MINOR FLARES IS NOT EXPECTED TO CONTINUE AS TIGHT GRADIENTS STILL REMAIN. REGION 3224 (N16E13) CONTINUED ITS STRONG GROWTH BUT FLARE ACTIVITY HAS BEEN MINIMAL. FIVE SMALL, SIMPLE SUNSPOT GROUPS EMERGED TODAY.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO HIGH.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN UNSETTLED TO SLIGHTLY ACTIVE. THE GEOMAGNETIC FIELD IS EXPECTED TO BE UNSETTLED UNTIL 22 JULY, WITH MINOR ACTIVE CONDITIONS THEN OCCURRING THROUGH THE BALANCE OF THE FORECAST PERIOD. SATELLITE PROTON FLUXES GREATER THAN 10 MEV CROSSED THRESHOLD AT 1430Z. PAK FLUX THUS FAR WAS 100 P/CM²/SEC/STER AT 1825Z.

III. EVENT PROBABILITIES 21 JULY - 23 JULY

CLASS M 95/95/95

CLASS X 40/40/40

PROTON 10/10/15

PCAF REF (IN PROGRESS)

IV. OTTAWA 10.7 CM FLUX

OBSERVED 20 JULY 218

PREDICTED 21-23 JULY 214/200/200

90-DAY MEAN 20 JULY 177

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 19 JULY 12/11

ESTIMATED AFR/AP 20 JULY 14/12

PREDICTED AFR/AP 21-23 JULY 10/10 - 18/20 - 15/15

SOLTERWARN

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