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FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 1664

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 1300Z 15 JUN 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 14/1200Z TO 15/1200Z: SOLAR ACTIVITY HAS BEEN HIGH FOR THE PAST 24 HOURS. REGION 3776 (N13E41) PRODUCED 2 X-CLASS FLARES, AN X2/2B MAXING AT 0247Z AND AN X3/3B MAXING AT 1025Z. NEITHER EVENT HAD AN EXTRAORDINARY RADIO SIGNATURE, BUT THE LATTER FLARE HAD AN AREA OF NEARLY 2000 MILLIONTHS AND WAS REPORTED TO COVER 90 PERCENT OF THE PENUMBRA AREA OF THE LARGEST SPOT. DISK LOOPS ARE NOW IN PROGRESS. REGION 3763 (S10W93) PRODUCED 2 M-CLASS FLARES AS IT TRANSITTED THE WEST LIMB. THEY WERE AN M2/SN AT 14/2112 AND AN M5/1N MAXING AT 15/0032. FLARE LOOPS WERE VISIBLE NEAR SW06 FROM 0110-0545Z. NEW REGION 3780 (S17E71) JOINED THE CLUB BY PRODUCING AN M3/1B FLARE WHICH MAXED AT 0819Z. THIS FLARE WAS ACCOMPANIED BY MINOR RADIO NOISE ACROSS THE SPECTRUM AND INCLUDING A WEAK TYPE II SWEEP. REGION 3780 IS THE RETURN OF OLD REGION 3751 WHICH DEVELOPED ON THE DISK LAST ROTATION GROWING TO AN E-TYPE GROUP BY WEST LIMB PASSAGE. OF THE OTHER REGIONS ON THE DISK, 3770 (S17W39) AND 3774 (N09E14) ARE EXHIBITING ARCH FILAMENT SYSTEMS AND SUBFLARES AND ARE LIKELY PRODUCERS OF C-CLASS ACTIVITY.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE HIGH. REGION 3776 SHOULD CONTINUE TO PRODUCE AN X-CLASS FLARE EVERY DAY AND M-CLASS FLARES ARE POSSIBLE FROM 3780, 3774, AND 3770. REGION 3763 COULD STILL PRODUCE AN ENERGETIC EVENT FROM BEHIND THE LIMB.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN MOSTLY ACTIVE FOR THE PAST 24 HOURS. THE FIELD IS EXPECTED TO REMAIN ACTIVE ALTHOUGH AT DIMINISHED LEVELS UNTIL LATE ON 18 JUNE WHEN MINOR TO MAJOR STORM CONDITIONS COULD RESUME IN RESPONSE TO TODAY'S MAJOR FLARES. A MINOR PROTON EVENT IS EXPECTED FROM THE X3/3B FLARE. THE EVENT SHOULD BEGIN BEFORE 2000Z ON 15 JUNE AND SHOULD PEAK NEAR 50 PROTONS/CM<sup>2</sup>/SEC/STER ON 16 JUNE.

III. EVENT PROBABILITIES 15 JUN-18 JUN

CLASS M 99/99/99

CLASS X 60/ 60/60

PROTON 40/45/50

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 14 JUN 233

ESTIMATED 15 JUN 230

PREDICTED 16 JUN-18 JUN 220/220/220

9P DAY MEAN 14 JUN 166

V. GEOMAGNETIC A INDICES

OBSERVED AFR 13 JUN 043 AP 14 JUN 029

ESTIMATED AFR 14 JUN 027 AFR/AP 15 JUN 025/028

PREDICTED AFR/AP 16 JUN-18 JUN 025/025-015/015-045/035

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HFUS 3 BOU 152200

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLORADO

SDF NUMBER 166B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200Z 15 JUNE 1982

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 15/1200Z TO 15/2100Z: SOLAR ACTIVITY HAS CONTINUED HIGH FOR THIS PERIOD. REGION 3780 (S18E64), AFTER PRODUCING A M3/1B AT 0807Z, ADDED AN X1/2B AT 1507Z. MODERATE RADIO WAS RECORDED THROUGH THE SPECTRUM WITH 460 FLUX UNITS REPORTED BY OTTAWA AT 2800MHZ. WEAK TYPE II/IV DEKAMETRIC BURSTS AND STRONG SHORT WAVE FADE THROUGH 15MHZ ACCOMPANIED THIS FLARE. HOLLOMAN REPORTED 40 PERCENT MAIN UMBRAL COVERAGE AND FLARE EMISSION VISIBLE IN WHITE LIGHT. HOLLOMAN REPORTS A "PAN HANDLE" HAS FORMED ON THE SOUTHERN EXTREMITY OF THE MAIN PENUMBRA AND FORMED A DELTA AT THIS POINT. AS LONG AS THIS INSTABILITY REMAINS, FURTHER ENERGETIC FLARES CAN BE EXPECTED FROM REGION 3780. AFTER AN X2/2B AT 0215Z AND AN X3/3B AT 1016Z, ACTIVITY IN REGION 3776 (N13E33) HAS SUBSIDED DURING THE PAST NINE HOURS; PRODUCING "ONLY" A M5/1B WITH X-RAY MAX AT 1419Z. STRONG SHORT WAVE FADE THROUGH 15MHZ AND A BURST OF 220 FLUX UNITS AT 2695MHZ ACCOMPANIED THIS FLARE. THE TOTAL SUNSPOT AREA HAS DECREASED TO NEAR 2800 BUT ALL THE COMPLEXITY REMAINS. THE LARGE FILAMENT NORTH OF REGION 3776, WHICH DISAPPEARED YESTERDAY, HAS REFORMED. OTHER DISK REGIONS ARE SIMPLE IN MAGNETIC STRUCTURE.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO REMAIN HIGH WITH REGION 3776 THE MAIN CONTRIBUTOR. REGION 3780 WILL ADD TO THE ENERGETIC FLARES AS LONG AS ITS CURRENT INSTABILITY REMAINS.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN ACTIVE. THIS IS IN RESPONSE TO AN EQUATORIAL CORONAL HOLE; ISEE-3 SOLAR WIND SPEED HAS BEEN IN THE 500/600 KM/SEC RANGE. THE FIELD IS EXPECTED TO REMAIN ACTIVE, BUT SLOWLY ABATE. FLARE INDUCED STORM LEVELS ARE EXPECTED 18 JUNE. NO PROTON ENHANCEMENT HAS YET BEEN OBSERVED AT SATELLITE LEVEL AS A RESULT OF TODAY'S FLARES.

III. EVENT PROBABILITIES 16 JUNE - 18 JUNE

CLASS M 99/99/99

CLASS X 60/60/60

PROTON 40/45/50

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 15 JUNE 229

PREDICTED 16-18 JUNE 220/220/220

90-DAY MEAN 15 JUNE 166

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 14 JUNE 30/29

ESTIMATED AFR/AP 15 JUNE 25/28

PREDICTED AFR/AP 16-18 JUNE 25/25 - 15/15 - 45/35

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