

HFUS 3 BOU 312200

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 031

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 2200Z 31 JAN 1984

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 30/2100 TO 31/2100Z: SOLAR ACTIVITY HAS BEEN MODERATE FOR THE PAST 24 HOURS. REGIONS 4397 (N16W68), 4398 (N15W57), AND 4399 (N12W35) CONSPIRED TO PRODUCE TWO M-CLASS X-RAY EVENTS. THE EARLIER EVENT WAS SIMULTANEOUS SUBFAINT FLARES IN 4398 AND 4399 TO GIVE AN M1 AT 0733Z WITH MODERATE RADIO NOISE INCLUDING 330 FLUX UNITS AT 10 CM. THE OTHER M EVENT WAS A LONG-LIVED EVENT WHICH BEGAN AT APPROXIMATELY 1030Z, MAXED AT 1302Z, AND ENDED NEAR 1500Z. IT BEGAN WITH AN ACTIVE DARK FILAMENT NORTH OF THE LEADER UMBRA OF REGION 4398 WHICH ARCHED WEST TO REGION 4397. AT ABOUT 1300Z THE FILAMENT ERUPTED TRIGGERING A 1B FLARE AND A BRIGHT SURGE WHICH COULD BE SEEN ABOVE THE WEST LIMB. REGION 4398 ALSO PRODUCED A C8/1B EVENT AT 0542Z WHICH WAS ASSOCIATED WITH A WEAK TYPE II AND MODERATE TYPE IV RADIO SWEEPS. REGIONS 4398 AND 4399 HAVE BOTH DECAYED SIGNIFICANTLY IN WHITE LIGHT. 4398 REMAINS MAGNETICALLY COMPLEX BUT 4399 HAS LOST ITS DELTA CONFIGURATION AND IS NOW OF GAMMA MAGNETIC CLASS. REGION 4403 (N15W12) HAS GROWN, MORE THAN DOUBLING IN SIZE AND SPOT COUNT. REGION 4406 (S12E09) IS ALSO GROWING DRAMATICALLY AND HAS A STRONG ARCH FILAMENT SYSTEM IN PROGRESS. NEW REGION 4408 (S12E76) CAME OVER THE EAST LIMB AS AN H-TYPE SPOT. SURGING HAS BEEN REPORTED THROUGHOUT THE DAY ON BOTH THE WEST (SW21) AND EAST (NE30) LIMBS.

IB. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE MODERATE FOR THE NEXT THREE DAYS. REGIONS 4398 AND 4399 STILL CONTAIN THE POTENTIAL FOR M-CLASS FLARES ALTHOUGH X-CLASS ACTIVITY AND PROTONS ARE NOW LESS LIKELY.

IIA. GEOPHYSICAL ACTIVITY SUMMARY FROM 30/2100Z TO 31/2100Z: THE GEOMAGNETIC FIELD HAS BEEN AT ACTIVE LEVELS AT MID LATITUDES AND MINOR TO MAJOR STORM LEVELS AT HIGH LATITUDES DURING THE PAST 24 HOURS. THIS ACTIVITY IS ATTRIBUTED TO RECENT MODERATE FLARES AND A SOLAR FILAMENT DISAPPEARANCE BETWEEN 26 AND 27 JANUARY.

IIB. GEOPHYSICAL ACTIVITY FORECAST: - THE GEOMAGNETIC FIELD IS EXPECTED TO CONTINUE AT ACTIVE LEVELS YET TOMORROW, DECLINING TO UNSETTLED CONDITIONS BY THE END OF THE FORECAST PERIOD UNLESS MAJOR FLARES OCCUR IN THE MEANTIME.

III. EVENT PROBABILITIES 01 FEB-03 FEB

CLASS M 80/70/60

CLASS X 10/05/05

PROTON 05/01/01

PCAF GREEN

IV. OTTAWA 10.7 CM FLUX

OBSERVED 31 JAN 174

PREDICTED 01 FEB-03 FEB 160/140/120

90 DAY MEAN 31 JAN 101

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 30 JAN 023/028

ESTIMATED AFR/AP 31 JAN 025/025

PREDICTED AFR/AP 01 FEB-03 FEB 020/020-015/020-010/015

SOLTERWARN

BT