

HFUS 1 POL 131304

FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO
SDF NUMBER 286A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.
ISSUED 1300Z 13 OCTOBER 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM
12/1200Z TO 13/1200Z:

SOLAR ACTIVITY HAS BEEN MODERATE. SEVEN CLASS M EVENTS HAVE OCCURRED IN THE PAST 24 HOURS. THE TWO LARGEST WERE M3 AT 12/1446Z AND 13/0716Z. WEATHER HAS LIMITED OPTICAL IDENTIFICATION OF THEIR SOURCE REGIONS. AT LEAST ONE OF THE M3 EVENTS WAS ASSOCIATED WITH ACTIVITY IN REGION 3403 (S11E72) WHICH NOW APPEARS AS A LARGE AND BRILLIANT PLAGE WITH A LARGE SPOT GROUP OF UNDETERMINED COMPLEXITY. REGION 3390 (S18E06) CONTINUES TO FLARE ALMOST CONTINUOUSLY AS IT INTERACTS WITH DEVELOPING REGIONS ON ITS BOUNDARIES. A POWERFUL DELTA CONFIGURATION WITHIN A LARGE PENUMBRAL AREA DOMINATES THE REGION. ACTIVE FILAMENTS AND BRILLIANT, COMPACT PLAGE FORETELL ADDITIONAL GREAT FLARES. MINOR REGIONS ARE DEVELOPING AT N19W40 (REGION 3401), S12W59 (REGION 3404) AND AT S10E25 (3405). SURGES AT S05E90 MAY INDICATE ANOTHER REGION NEARING THE LIMB OR THEY MAY ORIGINATE IN THE TRAILING PORTION OF REGION 3403.

IB. SOLAR ACTIVITY FORECAST:

CLASS X AND PROTON FLARES ARE EXPECTED FROM REGION 3390 AND POSSIBLY ALSO FROM REGION 3403. THE NEXT EVENTS COULD BE MUCH STRONGER THAN ANY YET RECORDED FROM THESE REGIONS.

II. GEOPHYSICAL SUMMARY AND FORECAST:

THE GEOMAGNETIC FIELD HAS BEEN UNSETTLED TO QUIET. A MAJOR STORM IS EXPECTED TO COMMENCE SUDDENLY AS EARLY AS 1800Z TODAY AND CONTINUE INTO 15 OCTOBER. THE SATELLITE-LEVEL PROTON EVENT PEAKED AT 1130Z WITH 240 PROTONS/CM2/SEC/STER AT GT 10 MEV. A POLAR CAP ABSORPTION BEGAN AT 12/1445Z AND IS EXPECTED TO CONTINUE FOR ANOTHER 36 HOURS.

III. EVENT PROBABILITIES: 14-16 OCTOBER

CLASS M 90/90/90

CLASS X 40/40/40

PROTON 40/40/40

PCAF IN PROGRESS

IV. OTTAWA 10.7 FLUX

OBSERVED 12 OCTOBER 234

ESTIMATED 13 OCTOBER 245

PREDICTED 14-16 OCTOBER 250/245/240

90 DAY MEAN 12 OCTOBER 217

V. GEOMAGNETIC A INDICES

OBSERVED AFR 11 OCTOBER 29 AP 12 OCTOBER 14

ESTIMATED AFR 12 OCTOBER 12 AFR/AP 13 OCTOBER 15/15

PREDICTED AFR/AP 14-16 OCTOBER 55/50 40/50 25/25

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HFUS 3 BOU 132200

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLORADO

SDE NUMBER 286B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200Z 13 OCTOBER 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 13/1200Z TO 13/2100Z: SOLAR ACTIVITY WAS MODERATE DURING THE PAST 9 HOURS. REGION 3390 (S18E07) PRODUCED AN M3/SF FLARE WITH MAXIMUM AT

1823Z, IN ADDITION TO SEVERAL C-CLASS SUBFLARES. THE M3 EVENT WAS ACCOMPANIED BY STRONG SHORT-WAVE FADES TO 12MHZ AND MODERATE RADIO NOISE BURSTS AT MICROWAVE FREQUENCIES. REGION 3388 (S09W78) HAS BEEN FAIRLY QUIET, PRODUCING ONLY ONE C-CLASS SUBFLARE DURING THE PERIOD. NEW REGION 3405 (S09E19) WAS NUMBERED TODAY.

IB. SOLAR ACTIVITY FORECAST: ADDITIONAL CLASS X PROTON FLARES ARE TO BE EXPECTED FROM REGION 3390. REGION 3403 (S12E65) ALSO APPEARS TO HAVE MAJOR FLARE POTENTIAL. CONSIDERING THE EFFECTS THE TWO X-CLASS FLARES HAVE ALREADY HAD ON THE INTERPLANETARY MEDIUM, THE GEOPHYSICAL CONSEQUENCES OF ANOTHER MAJOR FLARE IN THE NEXT FEW DAYS SHOULD BE MUCH ENHANCED. SUCH A FLARE IS NOW QUITE LIKELY.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN UNSETTLED DURING THE PAST 9 HOURS. THE SUDDEN COMMENCEMENT OF MAJOR GEOMAGNETIC STORM CONDITIONS IS CONSIDERED IMMINENT. ISEE-3 E-FIELD MEASUREMENTS STRENGTHEN OUR CONFIDENCE IN THE APPROACH OF A SUDDEN COMMENCEMENT. THE SATELLITE-LEVEL PROTON COUNTS CONTINUE BETWEEN 800 AND 900 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV ENERGY LEVELS. THULE 30MHZ RIOMETER VALUES HAVE BEEN AS HIGH AS 6.3 DB DURING DAYLIGHT HOURS TODAY. NEITHER THE PROTON COUNTS AT SATELLITE ALTITUDES NOR THE RIOMETER READINGS HAVE SHOWN SIGNS OF SUBSIDING.

III. EVENT PROBABILITIES 14 OCTOBER - 16 OCTOBER

CLASS M	90/90/90
CLASS X	40/40/40
PROTON	40/40/40
PCA	IN PROGRESS

IV. OTTAWA 10.7 CM FLUX

OBSERVED	13 OCTOBER 244
PREDICTED	14-16 OCTOBER 250/245/240
90-DAY MEAN	13 OCTOBER 218

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP	12 OCTOBER 12/14
ESTIMATED AFR/AP	13 OCTOBER 09/15
PREDICTED AFR/AP	14-16 OCTOBER 55/50 - 40/50 - 25/25

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