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FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLORADO

SDF NUMBER 130A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 1200UT 10 MAY 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM

09/1200UT TO 10/1200UTC

SOLAR ACTIVITY HAS BEEN MODERATE. REGION 3099 (N10E16) HAS PRODUCED THREE M CLASS EVENTS AS FOLLOWS: M1/1B MAXIMUM AT 09/2211Z, M1/5B MAXIMUM AT 09/2307Z, M1/SN MAXIMUM AT 10/0506Z. THE EARLIEST EVENT WAS ACCOMPANIED BY SMALL AMOUNTS CENTIMETRIC OUTPUT. REGION 3079 (N06W72) PRODUCED AN M1/SF MAXIMUM AT 10/0731Z. REGION 3079 RETAINS POTENTIAL FOR ACTIVITY, ALTHOUGH LARGE FLARES APPEAR LESS LIKELY. REGION 3099 HAS MAINTAINED THE FEATURES OF A VERY ENERGETIC REGION. CONSENSUS INDICATES A HIGH PROBABILITY OF LARGE FLARE(S). OLD REGION 3049 IS DUE TO RETURN BY THE END OF THE U.T. DAY NEAR NE16. RECENT REPORTS INDICATE EXTENSIVE MULTIPLE SURGES ON THE EAST LIMB FROM N07 TO N19, SUGGESTING THE FIRST STATEMENT FROM THIS OLD REGION WHICH ACHIEVED SIGNIFICANCE LAST ROTATION.

IB. SOLAR ACTIVITY FORECAST:

SOLAR ACTIVITY IS EXPECTED TO BECOME MODERATE TO HIGH, WITH PRINCIPAL CONTRIBUTIONS EXPECTED FROM REGION 3099 AND RETURNING REGIONS.

II. GEOPHYSICAL SUMMARY AND FORECAST:

THE GEOMAGNETIC FIELD HAS BEEN ACTIVE AND A PROTON ENHANCEMENT HAS BEEN IN PROGRESS SINCE 09/1400Z. A FURTHER ENHANCEMENT BEGAN AFTER 10/0800Z AND PROTON FLUX GREATER THAN 10 MEV REACHED LEVELS OF 125/CM2/SEC/STER BY 10/0930Z. THESE LATER PARTICLES ARE OF UNKNOWN ORIGIN. THEY ARE LATE, TO BE FROM FLARE IN REGION 3079 WHICH OCCURRED EARLY ON 09 MAY. MORE RECENT M FLARES DID NOT DISPLAY FEATURES SUGGESTING PROTONS.

III. EVENT PROBABILITIES: 11-13 MAY

CLASS M 80/85/90

CLASS X 25/30/35

PROTON 10/15/15

PCAF YELLOW

IV. OTTAWA 10.7 FLUX

OBSERVED 09 MAY 215

ESTIMATED 10 MAY 215

PREDICTED 11-13 MAY 215/220/225

90 DAY MEAN 09 MAY 213

V. GEOMAGNETIC A INDICES

OBSERVED AFR 08 MAY 09 AP 09 MAY 38

ESTIMATED AFR 09 MAY 35 AFR/AP 10 MAY 16/30

PREDICTED AFR/AP 11-13 MAY 14/20 18/25 14/20

SOLTERWARN

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HEUS 3 RQU 102200

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLORADO

SDE NUMBER 130B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200 UT 10 MAY 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 10/1200 UT TO 10/2200 UT. SOLAR ACTIVITY HAS BEEN MODERATE. REGION 3079 (N06W-7) PRODUCED A M3 X-RAY EVENT WITH A BRIGHT SURGE ON THE LIMB TO .16 RADII AT 1301 UT. REGION 3099 (N10E11) REMAINS COMPLEX WITH A STRONG DELTA CONFIGURATION IN THE SPOT GROUP. IT PRODUCED SEVERAL SMALL FLARES, THE LARGEST WAS A C7/SN AT 1938 UT. A NEW REGION 3106 (N06E90) CONTAINS A LARGE LEADER SPOT BUT IS NOT COMPLETELY ROTATED ONTO THE DISK. THIS REGION IS THE RETURN OF REGION 3049. IT PRODUCED AN ERUPTIVE PROMINENCE ON THE LIMB AT 1242 UT, FOLLOWED BY A LOOP PROMINENCE SYSTEM WHICH WAS VISIBLE UNTIL 1900 UT. TWO SMALL NEW REGIONS DEVELOPED ON THE DISK, 3104 (N08W11) AND 3105 (S17E13).

IP. SOLAR ACTIVITY FORECAST: SOLAR ACTIVITY IS EXPECTED TO BE HIGH DURING THE FORECAST PERIOD, WITH MAJOR FLARES LIKELY FROM REGION 3099 AND 3106.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN UNSETTLED. ACTIVE CONDITIONS ARE EXPECTED DURING THE NEXT THREE DAYS FROM THE M7/2B FLARE ON 08/2254 UT AND OTHER RECENT ACTIVITY. THE PROTON EVENT WHICH BEGAN AT 09/1440 UT CONTINUES AND AT 10/2130 UT THE PROTON FLUX GREATER THAN 10 MEV WAS 150 P/CM<sup>2</sup>/SEC/STER AT SATELLITE ALTITUDES. A SHARP INCREASE IN PARTICLES WAS NOTED AT 10/0830 UT. THIS EVENT IS EXPECTED TO END IN THE NEXT 36 HOURS.

III. EVENT PROBABILITIES 11 MAY - 13 MAY

CLASS M 90/90/90

CLASS X 35/35/35

PROTON 80/25/25

PCAF IN PROGRESS

IV. OTTAWA 10.7 CM FLUX

OBSERVED 10 MAY 212

PREDICTED 11-13 MAY 215/220/225

90-DAY MEAN 10 MAY 213

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 09 MAY 34/38

ESTIMATED AFR/AP 10 MAY 19/30

PREDICTED AFR/AP 11-13 MAY 25/30 - 20/25 - 18/20

SOLTERWARN

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