

HFUS/1 BOU 181300

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLO

SDF NUMBER 138A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 1200UT 18 MAY 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 17/1200UT TO 18/1200UT:

SOLAR ACTIVITY HAS BEEN LOW DURING THE PAST 24 HOURS. REGION 3106 (N12W16), STAYING TRUE TO ITS HISTORY OF PRODUCING A SIGNIFICANT FLARE EVERY OTHER DAY, MANAGED TO PRODUCE ONLY SUBFLARES. REGION 3112 (N15W03) AND 3113 (S24E23), ALTHOUGH NOT AS IMPRESSIVE IN MOST PARAMETERS, HAVE CONTRIBUTED MORE IN TOTAL SUBFLARE PRODUCTION. REGION 3106 APPEARS TO HAVE LOST ITS DELTA ALONG WITH SOME OF ITS COMPLEXITY AND AREA. REGION 3112 HAS UNDERGONE LITTLE CHANGE, WHILE 3113 CONTINUES ITS SLOW GROWTH, WITH A WEAK DELTA CONFIGURATION NOW VISIBLE. THE REMAINDER OF THE DISK REGIONS HAVE BEEN UNIMPRESSIVE. MINOR SURGING AT NE34 IS THE ONLY INDICATION OF EAST LIMB ACTIVITY.

IB. SOLAR ACTIVITY FORECAST:

SOLAR ACTIVITY IS EXPECTED TO BE MODERATE, BASED ON THE REMAINING POTENTIAL OF 3106, 3112 AND TO A LESSER EXTENT 3113. REGION 3106, IF TRUE TO FORM, SHOULD PRODUCE AN M-CLASS OR LARGER FLARE BY LATE TODAY OR EARLY TOMORROW. ANY FURTHER ACTIVITY PAST THAT POINT LOOKS DOUBTFUL, UNLESS SIGNIFICANT REDEVELOPMENT OCCURS.

II. GEOPHYSICAL SUMMARY AND FORECAST:

THE GEOMAGNETIC FIELD HAS BEEN AT MAJOR STORM LEVELS SINCE A SUDDEN COMMENCEMENT AT 17/2300UT. A K-INDEX OF 8 WAS OBSERVED AT BOULDER BETWEEN 06-0900UT. THE TIMING OF THE SC FITS THE X1/3P FLARE ON 16/0859UT. THE PROTON EVENT FROM THIS FLARE REMAINS IN PROGRESS WITH A PROTON FLUX INCREASE TO APPROXIMATELY 120 P/CM²/SEC/STER NOTED AT 17/2300UT (TIME OF SUDDEN COMMENCEMENT). PARTICLE COUNTS BEGAN CROSSING EVENT THRESHOLD AT 18/1200UT. THE POLAR CAP ABSORPTION EVENT WENT BELOW DAYLIGHT THRESHOLDS OF 2DB AT 18/0145UT.

III. EVENT PROBABILITIES 19-21 MAY:

CLASS M 80/70/65

CLASS X 25/20/10

PROTON 25/20/10

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 17 MAY 203

ESTIMATED 18 MAY 195

PREDICTED 19-21 MAY 190/185/180

90-DAY MEAN 17 MAY 215

V. GEOMAGNETIC A INDICSE

OBSERVED AFR 16 MAY 40 AP 17 MAY 15

ESTIMATED AFR 17 MAY 14 AFR/AP 18 MAY 60/80

PREDICTED AFR/AP 19-21 MAY 40/50 - 20/35 - 15/25

SOLTERWARN

PT

45HS 3 50U 182200

FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLORADO

SDF NUMBER 1398

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200 UT 18 MAY 1981

IA. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 18/1200 UT TO 18/2200 UT: SOLAR ACTIVITY HAS BEEN LOW FOR THE PAST 10 HOURS. THE LARGEST EVENT WAS A C6/1B AT 1945Z FROM REGION 3106 (N13W26), WHICH IS GRADUALLY DECAYING AND WHICH HAS A COMPLEX CLASS-D SPOT GROUP WITH A HIGH SPOT COUNT. NEARBY REGION 3112 (N16W13) IS SLOWLY INTENSIFYING AND ADDING SMALL NEW SPOTS NEAR REGION 3106. IT CONTINUES TO SPORT A SMALL DELTA CONFIGURATION. MINOR GROWTH HAS OCCURRED IN REGION 3114 (S25W28) BUT ITS SPOT GROUP REMAINS A SMALL CLASS-C. FILAMENT AND FLARE STRUCTURE ASSOCIATED WITH THE LARGE SPOT IN REGION 3113 (S24E16) INDICATE POTENTIAL FOR A SINGLE MAJOR EVENT DURING THE NEXT WEEK. SMALL SPOTS APPEARED TODAY IN AN OLD FLARE REGION (3115) AT N30W06 AND REGION 3116 (N34E73) ROTATED OVER EAST LIMB WITH SMALL SPOTS.

IB. SOLAR ACTIVITY FORECAST: AN ISOLATED MAJOR EVENT IS EXPECTED FROM COMPLEX 3106-3112 DURING THE NEXT 48 HOURS. PROTONS AND GEOMAGNETIC ACTIVITY ARE EXPECTED TO FOLLOW THAT EVENT. OTHERWISE ACTIVITY WILL BE LOW.

II. GEOPHYSICAL SUMMARY AND FORECAST: THE GEOMAGNETIC FIELD HAS BEEN AT MINOR STORM LEVEL FOR THE PAST 10 HOURS. ACTIVE TO MINOR STORM CONDITIONS ARE EXPECTED TO DOMINATE THIS FORECAST PERIOD. THE PROTON EVENT FROM THE X1/3B FLARE OF 16/0859Z HAS REMAINED BELOW EVENT THRESHOLD SINCE 18/1200Z.

III. EVENT PROBABILITIES 19 MAY - 21 MAY

CLASS M 80/70/65

CLASS X 25/20/10

PROTON 25/20/10

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 18 MAY 190

PREDICTED 19-21 MAY 183/180/177

90-DAY MEAN 18 MAY 215

V. GEOMAGNETIC A INDICES

OBSERVED AFR/AP 17 MAY 14/15

ESTIMATED AFR/AP 18 MAY 36/55

PREDICTED AFR/AP 19-21 MAY 20/40 - 20/25 - 15/25

SOLTERWARN

BT