

HFUS 1 BOU 202200  
FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER COLO  
SDF NUMBER 354

JOINT USAF/NOAA PRIMARY REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY  
ISSUED 2200Z 20 DECEMBER 1978

IA. SOLAR ACTIVITY WAS LOW DURING THE PAST 24 HOURS. THE LARGEST X-RAY BURST WAS A C4 WHICH MAXED NEAR 20/0648Z. THE CULGOORA OBSERVATORY REPORTED TYPE II AND TYPE III SWEEP FREQUENCY BURSTS AND A 1B FLARE NEAR NW20 WHICH WERE PROBABLY ASSOCIATED WITH THIS EVENT. SEVERAL SUBFLARES OCCURRED IN REGIONS 1460 (N11E14) AND 1462 (N20W61), BUT THE DISK WAS GENERALLY UNIMPRESSIVE. WHAT APPEARED TO BE THE REMAINS OF AN ERUPTIVE PROMINENCE WAS OBSERVED NEAR NW44 AT 20/2130Z.

IB. SOLAR ACTIVITY IS EXPECTED TO BE GENERALLY LOW DURING THE NEXT 24 HOURS WITH MOSTLY C-CLASS ACTIVITY.

II. THE GEOMAGNETIC FIELD WAS GENERALLY ACTIVE DURING THE PAST 24 HOURS WITH PERIODS AT MINOR STORM LEVELS. ACTIVE CONDITIONS SHOULD PREVAIL ON 21 DECEMBER WITH UNSETTLED CONDITIONS ON 22-23 DECEMBER.

III. EVENT PROBABILITIES 21 DECEMBER - 23 DECEMBER

CLASS M            20/20/30

CLASS X            01/01/01

PROTON            01/01/01

PCAF              GREEN

IV. OTTAWA 10.7 CM FLUX

OBSERVED          20 DECEMBER 143

PREDICTED         21-23 DECEMBER 138/134/136

90-DAY MEAN       20 DECEMBER 162

V. GEOMAGNETIC A INDICES

OBSERVED FREDERICKSBURG 19 DECEMBER 26

ESTIMATED AFR/AP   20 DECEMBER 18/28

PREDICTED AFR/AP   21-23 DECEMBER 18/20 - 12/12 - 12/12

SOLTERWARN

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FROM SPACE ENVIRONMENT SERVICES CENTER BOULDER, COLO

SDF NUMBER 354

JOINT USAF/NOAA PRIMARY REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY

ISSUED 2200Z 20 DECEMBER 1979

IA. SOLAR ACTIVITY HAS BEEN HIGH DURING THE PAST 24 HOURS. SHORTLY AFTER THE ISSUE OF YESTERDAY'S FORECAST, AN X1/2B FLARE WAS OBSERVED FROM REGION 2204 (S15E19, CURRENT LOCATION). MAXIMUM FOR THIS FLARE WAS AT 19/2216Z AND HAD AN ACCOMPANYING TYPE II SWEEP AND A 630 FLUX UNIT RADIO BURST AT 2695 MHZ. AT 0559Z TODAY, THIS SAME REGION PRODUCED AN X1/1B REACHING MAXIMUM AT 0616Z. TYPE II AND IV RADIO SWEEPS AND DISCREET FREQUENCY RADIO BURSTS WERE ASSOCIATED WITH THIS EVENT, WITH 190 FLUX UNITS RECORDED AT 2695 MHZ. REGION 2204 HAS UNDERGONE SIGNIFICANT CHANGES DURING THE PAST 24 HOURS, WITH RAPID SPOT GROWTH REPORTED, SPOT ROTATION, AND VERY TIGHT GRADIENTS IN THE CENTRAL PORTION OF THE REGION. THERE APPEARS TO BE A DELTA MAGNETIC CONFIGURATION IN THE LARGE CENTRAL SPOT AND ENOUGH POLARITY MIXING TO GIVE THE REGION A GAMMA COMPLEXITY. OTHER REGIONS PRODUCING SMALL FLARES HAVE BEEN 2196 (S12W46), 2200 (S05W33), 2202 (N10W68) AND 2206 (S29W14). NEW REGION 2207 (S12E74) HAS ROTATED OVER THE EAST LIMB AS AN A TYPE GROUP AND PRODUCED A SMALL SUBFLARE AT 1017Z MAXIMUM.

IB. SOLAR ACTIVITY WILL CONTINUE AT MODERATE TO ISOLATED HIGH LEVELS THROUGH THE FORECAST PERIOD. REGION 2204 RETAINS THE COMPLEXITY TO PRODUCE X-CLASS FLARES. A SLIGHT PROTON ENHANCEMENT OF ABOUT 10 PARTICLES AT GREATER THAN 10 MEV IS POSSIBLE EARLY IN THE ZULU DAY ON 21 DEC.

II. THE GEOMAGNETIC FIELD HAS BEEN QUIET DURING THE PAST 24 HOURS. UNSETTLED CONDITIONS ARE FORECAST UNTIL MID ZULU DAY ON 22 DEC WHEN HIGH ACTIVE CONDITIONS ARE EXPECTED AS A RESULT OF THE X-CLASS FLARES DURING THE PAST 24 HOURS PLUS A SOLAR SECTOR BOUNDARY DUE TO AFFECT THE EARTH. A PROMINENCE LOCATED AT N19W90 ERUPTED TODAY AT 1728Z AND COULD ADD TO THE GEOMAGNETIC EFFECTS ON 22 DEC.

III. EVENT PROBABILITIES 21 DECEMBER - 23 DECEMBER

CLASS M 80/80/60

CLASS X 30/30/20

PROTON 20/20/10

PCAF YELLOW

IV. OTTAWA 10.7 CM FLUX

OBSERVED 20 DEC 193

PREDICTED 21-23 DEC 188/184/180

90-DAY MEAN 20 DEC 225

V. GEOMAGNETIC INDICES

OBSERVED FREDERICKSBURG 19 DECEMBER 05

ESTIMATED AFR/AP 20 DECEMBER 05/08

PREDICTED AFR/AP 21-23 DECEMBER 12/14 20/20 12/12

SOLTERWARN

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