

HFUS , R01 091310

FROM SPACE ENVIRONMENT SERVICES CENTER , BOULDER , COLORADO
SDE NUMBER 129A

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 1200UT 09 MAY 1981

I A. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM
08/1200UT TO 09/1200UT :

SOLAR ACTIVITY HAS BEEN MODERATE DURING THE PAST 24 HOURS.
REGION 3099 (NOTE 27) PRODUCED AN M7/2B FLARE WITH MAX-
IMUM AT 08/2251UT . THIS FLARE WAS ACCCOMPANIED BY STRONG
MICROWAVE BURSTS (BUT NOT U-SHAPED SPECTRUM) AND STRONG
TYPE II AND TYPE IV SWEEP FREQUENCY RESPONSES. AFTER
THIS, REGION 3079 (NOTE 56) PRODUCED AN M2/1B FLARE WITH MAX-
IMUM AT 09/0250UT . FAIRLY STRONG MICROWAVE BURSTS WERE REPORTED
WITH THIS EVENT, ALSO.

I B. SOLAR ACTIVITY FORECAST :

SOLAR ACTIVITY IS EXPECTED TO BE MODERATE TO OCCASIONALLY
HIGH. REGION 3099 HAS FINALLY REVEALED ITSELF AS THE POTEN-
TIAL PRODUCER OF A CLASSICAL PROTON FLARE. THE PACE OF SUB-
FLARE ACTIVITY IN THIS REGION SHOULD NOW INCREASE. THE REGION
IS INCREASINGLY LIKELY TO PRODUCE MAJOR FLARES. REGION 3079
SEEMS CAPABLE OF PRODUCING SEVERAL MORE M-CLASS FLARES, BUT IS
LESS LIKELY TO PRODUCE X-CLASS FLARES.

I I. GEOPHYSICAL SUMMARY AND FORECAST :

ALTHOUGH REGION 3099 IS ONLY AT E27, THE M7 FLARE OF 08/2251
UT CAUSED GREATER THAN 10 MEV PROTON FLUXES TO INCREASE AT
EARTH. PROTON EVENT THRESHOLDS (10 PARTICLES PER SECOND)
WERE REACHED AT 09/1200UT . COMPUTER MODELS PROJECT AN EVENT
MAXIMUM OF 21 PARTICLES PER SECOND AT ABOUT 10/0000 UT. THE
THULE 30 MHZ RIOMETER CURRENTLY SHOWS 0.5 DB ABSORPTION
(PCA EVENT THRESHOLD IS 2.0DB). THE GEOMAGNETIC FIELD WAS UN-
SETTLED UNTIL 09/0000 UT WHEN THERE WAS A GRADUAL COMMENCE-
MENT OF MINOR GEOMAGNETIC STORM CONDITIONS. FOUR CONSECUTIVE
K-VALUES OF 5 HAVE BEEN OBSERVED AT MIDLATITUDES THUS
FAR THIS UT DAY. THE DISTURBANCE IS EXPECTED TO DIMINISH
GRADUALLY FROM THIS POINT BUT THERE IS SOME CHANCE THE M7
FLARE IN REGION 3099 WILL INDUCE AN ADDITIONAL DISTURBANCE. IF
THE ADDITIONAL DISTURBANCE REACHES EARTH A SUDDEN COMMENCEMENT
COULD BE FELT LATE IN THE UT DAY ON 10 MAY.

III. EVENT PROBABILITIES: 10-12 MAY 1981

CLASS M 65/70/75

CLASS X 20/20/25

PROTON 10/10/15

POAF YELLOW

IV. OTTAWA 10.7 FLUX

OBSERVED 08 MAY 222

ESTIMATED 09 MAY 246

PREDICTED 10-12 MAY 246/244/239

90 DAY MEAN 08 MAY 213

V. GEOMAGNETIC A INDICES

OBSERVED AFR 07 MAY 05 AP 08 MAY 10

ESTIMATED AFR 08 MAY 09 AFR/AP 09 MAY 35/50

PREDICTED AFR/AP 10-12 MAY 28/40 16/20 14/15

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FROM SPACE ENVIRONMENT SERVICES CENTER, BOULDER, COLO
SDF 129B

JOINT USAF/NOAA REPORT OF SOLAR AND GEOPHYSICAL ACTIVITY.

ISSUED 0200UT 09 MAY 81

I A. ANALYSIS OF SOLAR ACTIVE REGIONS AND ACTIVITY FROM 09/1200 UT
TO 09/2200UT:

SOLAR ACTIVITY HAS BEEN LOW DURING THE PAST 10 HOURS. LITTLE OPTICAL
ACTIVITY HAS BEEN OBSERVED AND SATELLITE X-RAY BURSTS HAVE NOT
BEEN LARGER THAN C5. REGION 3099 (N10E24) HAS REMAINED QUIET DESPITE
EVIDENCE OF INCREASING COMPLEXITY AND GROWTH. SEVERAL OF THE RECENT
X-RAY BURSTS OCCURRED WITH NO VISIBLE OPTICAL RESPONSE, POSSIBLY
INDICATING THE RETURN OF OLD REGION 3049 (N16, CAR 150) DUE BACK
TOMORROW.

II. SOLAR ACTIVITY FORECAST:

SOLAR ACTIVITY IS EXPECTED TO INCREASE TO THE MODERATE LEVEL WITH
AT LEAST ONE M-CLASS OR GREATER EVENT LIKELY FROM REGION 3099.

ISOLATED M-CLASS FLARES ARE ALSO POSSIBLE FROM REGIONS 3079
(N08W64), 3080 (N16W60) AND 3090 (S20W16).

III. GEOPHYSICAL SUMMARY AND FORECAST:

THE GEOMAGNETIC FIELD HAS BEEN AT MINOR STORM LEVELS SINCE THE
BEGINNING OF THE PERIOD, BUT CURRENT INDICATIONS ARE THAT IT IS
GRADUALLY RETURNING TO THE ACTIVE LEVELS. ACTIVE CONDITIONS ARE
EXPECTED DURING THE NEXT 24 HOURS. THE M7/2B FLARE FROM REGION 3099
AT 08/2251 UT MAXIMUM HAS PRODUCED A PROTON ENHANCEMENT AT
SATELLITE ALTITUDES. THE MOST CURRENT COUNTS OF 17 PARTICLES PER CM²
SEC PER SECOND AT GREATER THAN 10 MEV IS THE HIGHEST READING OF THE PERIOD
INDICATING THE ENHANCEMENT IS NEAR MAXIMUM, AND SHOULD GRADUALLY
DECREASE THROUGH THE FORECAST PERIOD.

III. EVENT PROBABILITIES: 10 MAY - 12 MAY

CLASS M 65/70/75

CLASS X 20/20/25

PROTON 10/10/15

PCAF YELLOW

IV. OTTAWA 10.7 FLUX

OBSERVED 09 MAY 215

PREDICTED 10-12 MAY 22.0/225/230

90 DAY MEAN 09 MAY 213

V. GEOMAGNETIC ACTIVITY INDICES:

OBSERVED AFR/AP 08 MAY 09/10

ESTIMATED AFR/AP 09 MAY 35/40

PREDICTED AFR/AP 10-12 MAY 20/30 16/20 14/15

SOLTERWARN

BT