

1989 DOY 018

MKIII: 19 images

Event in northwest: 18:52 to 19:05

Faint [Prominence] Loop(s?).

Width of Loop: 18 degrees wide.

Center of Prominence Loop: 336 degrees pa.

PMON:

Nice data with at least six images of the prominence loop and blobs. Data has been analyzed on the grinnell.

SMM:

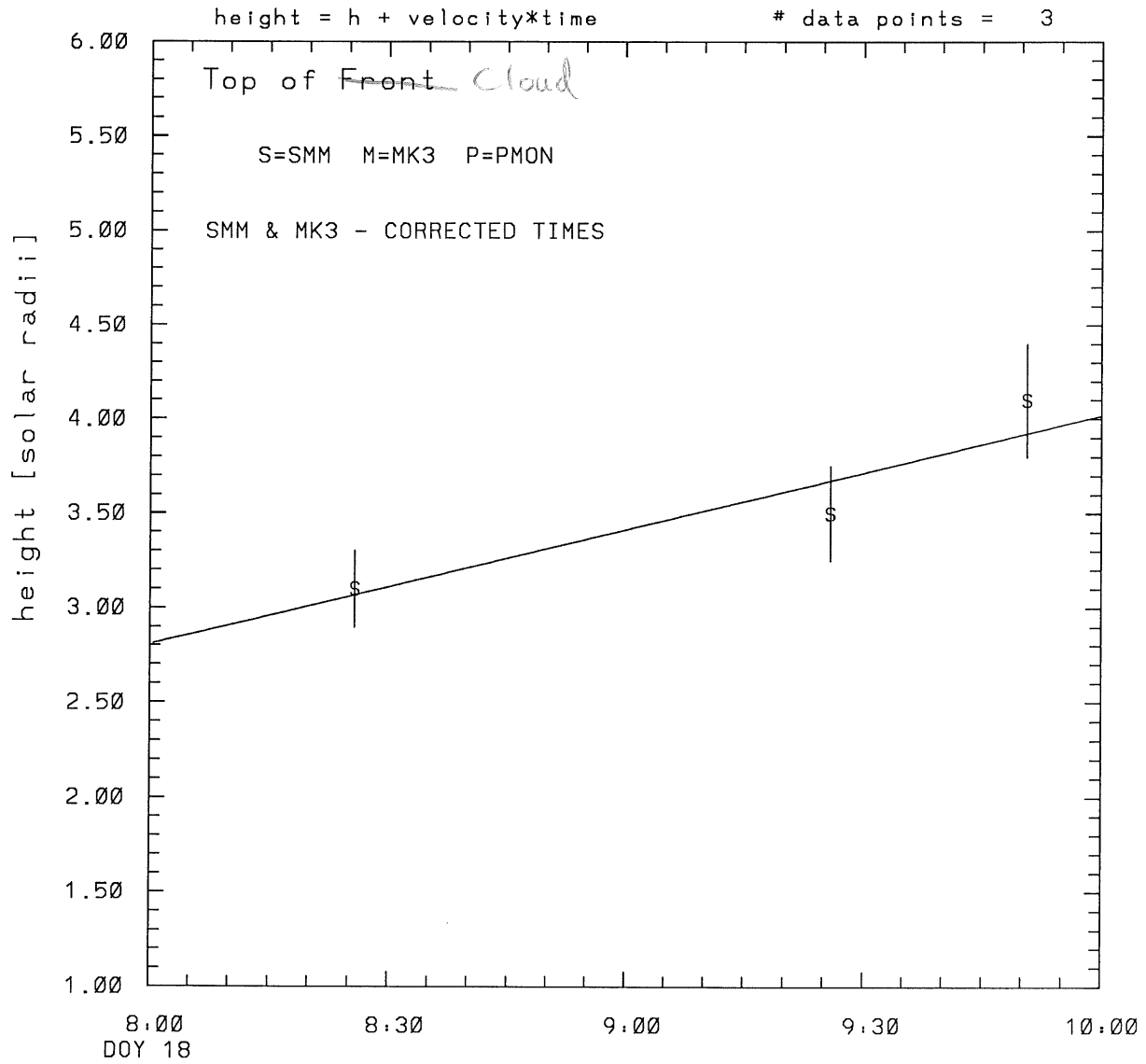
SMM sees two prominence blobs and what appears to be two possible prominence loops at 19:09(n) image. We measured both loops [UPPER and LOWER] and used both in the final velocity analysis.

composite

MK3/SMM

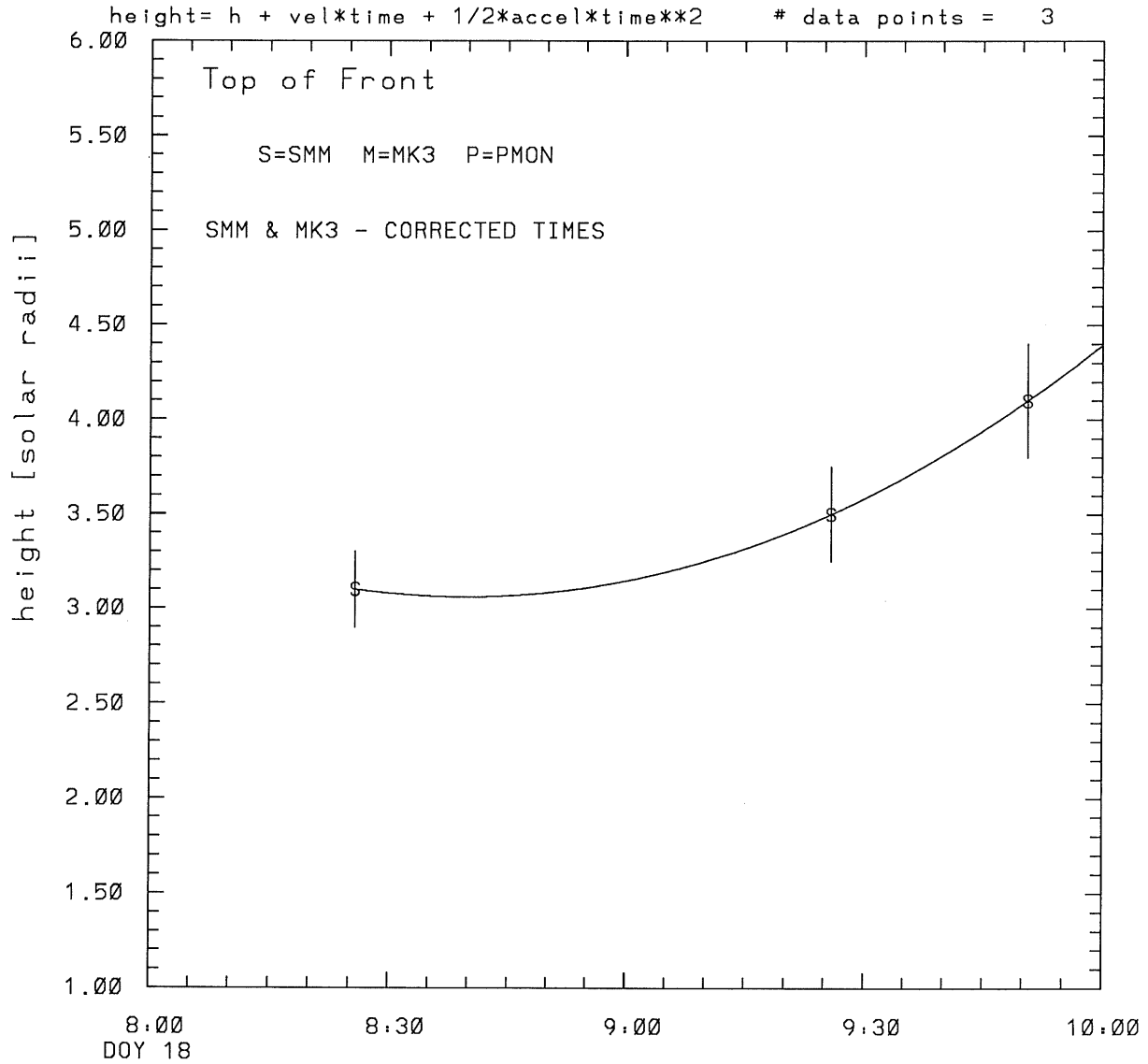
**SEE MKIII/SMM
1989 COMPOSITE
NOTEBOOK
FOR ADDITIONAL
TRAJECTORIES**

SMM C/P 1989 DOY 18 324 +/- 0 degrees



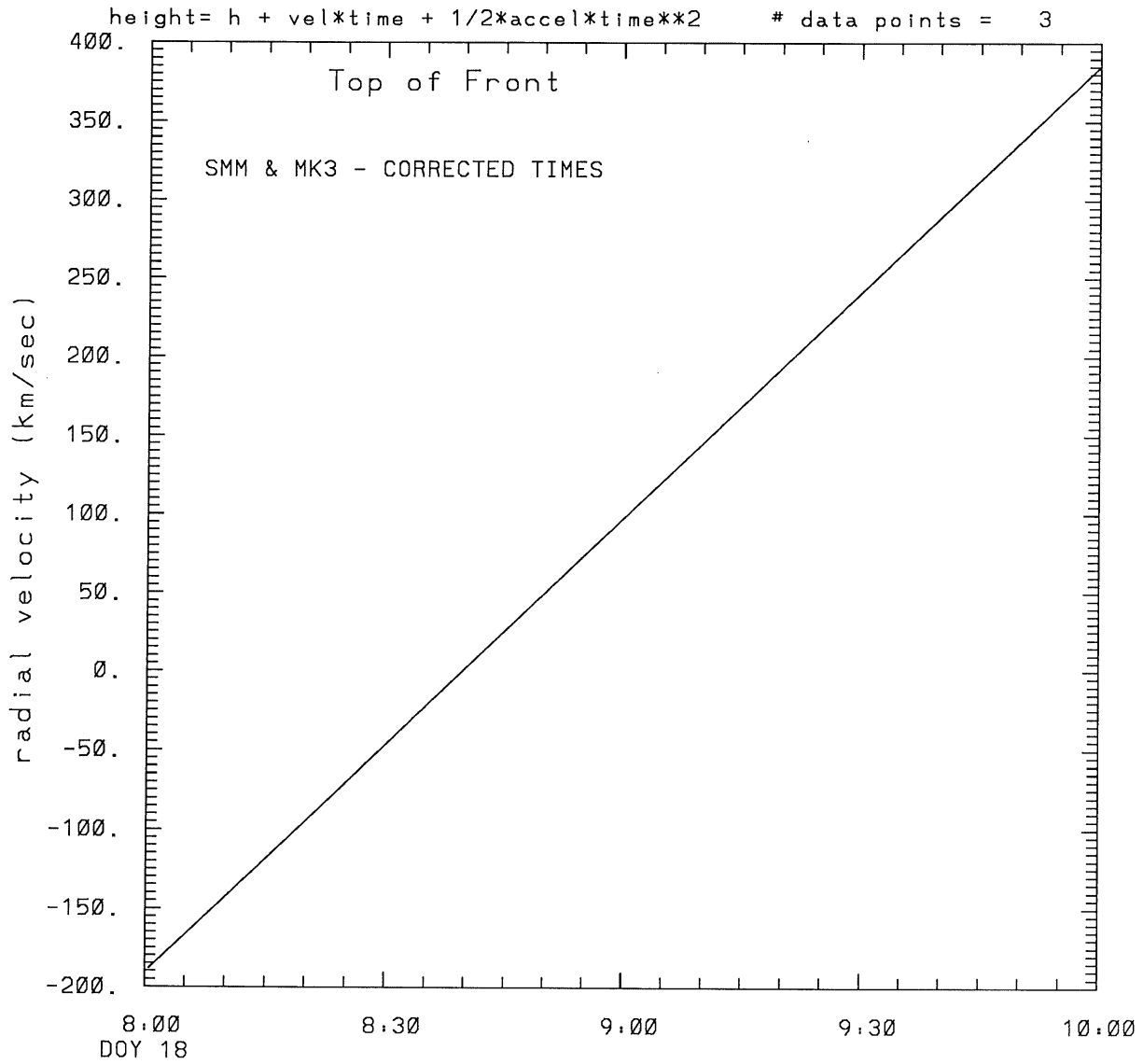
tstart=DOY 18 5: 1 +/- 31.2 [min.]
radial velocity= 117. +/- 29. [km/sec]

SMM C/P 1989 DOY 18 324 +/- 0 degrees



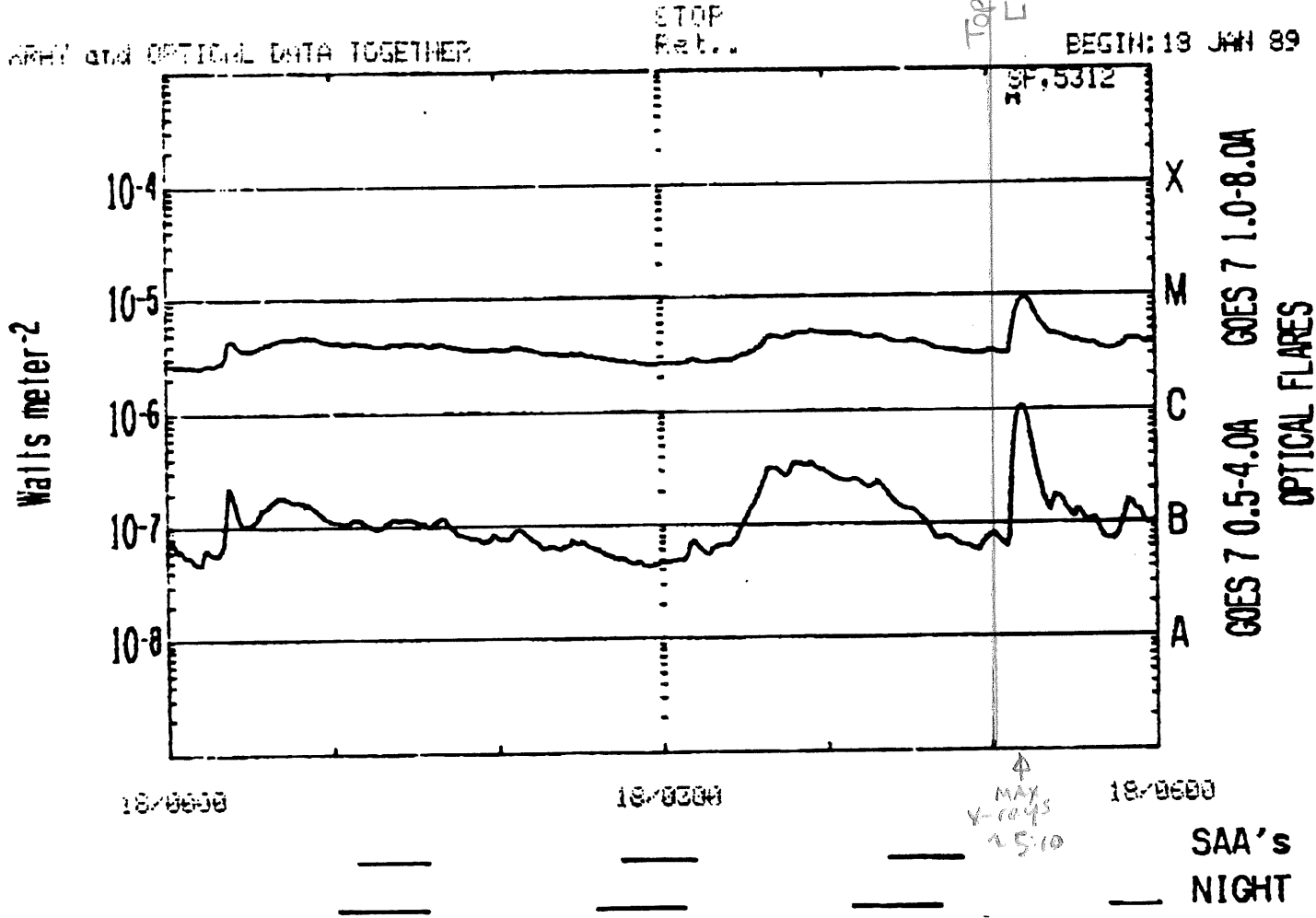
tstart=DOY 18 8:39 from derivative=0
Event begins at 3.06 Solar Radii
radial acceleration = 0.0800 +/- 0.0000 [km/sec**2]

SMM C/P 1989 DOY 18 324 +/- 0 degrees



tstart=DOY 18 8:39 from derivative=0
Event begins at 3.06 Solar Radii
radial acceleration=0.800E-01 km/sec**2

1989 Day 18



GOES-7 1 MIN DATA: OPTICAL FLARE DUR. IMP. REGION

RUN: 2842UT
21 JAN 89

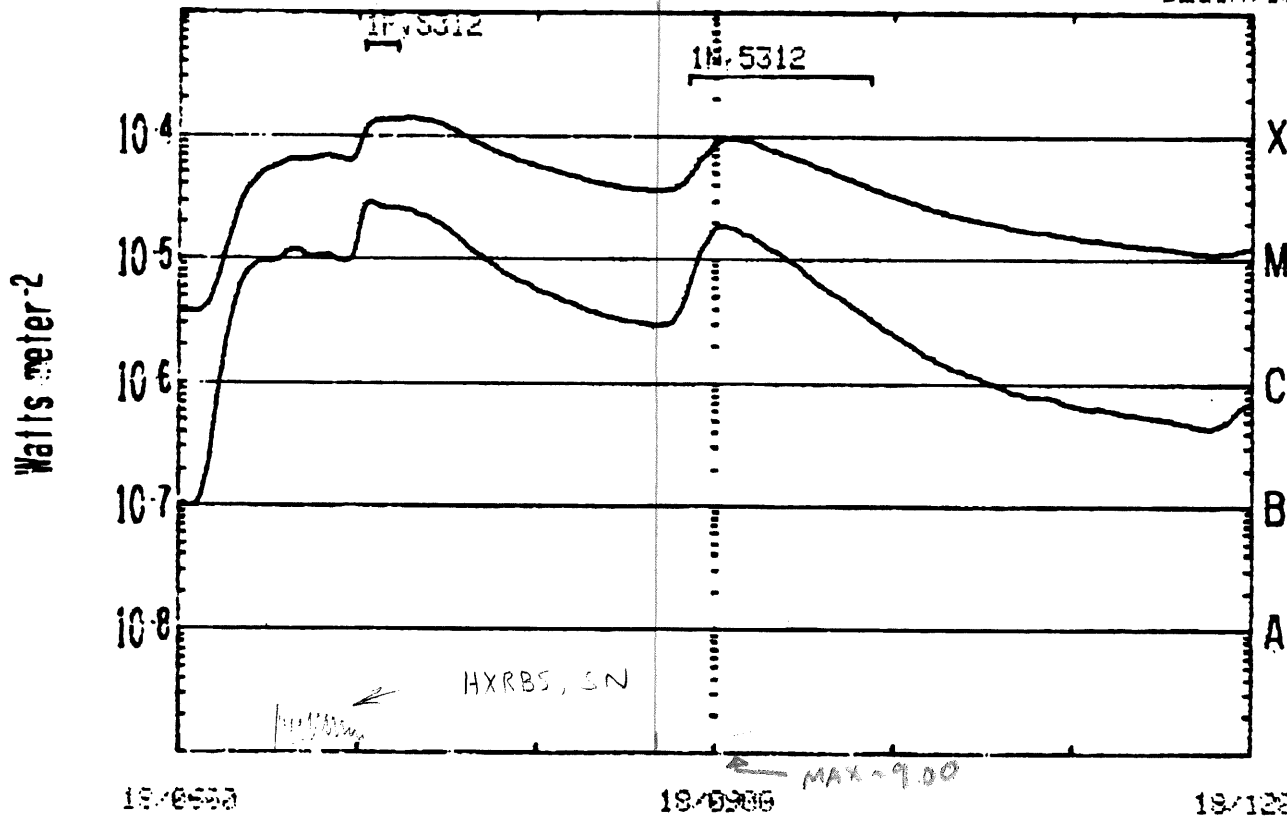
see next
page
For 2nd order
→ see last GOES plot

IMP and OPTICAL DATA TOGETHER

Top of Front
[8:39] 2nd order

STOP
Ret.

BEGIN: 19 JAN 89



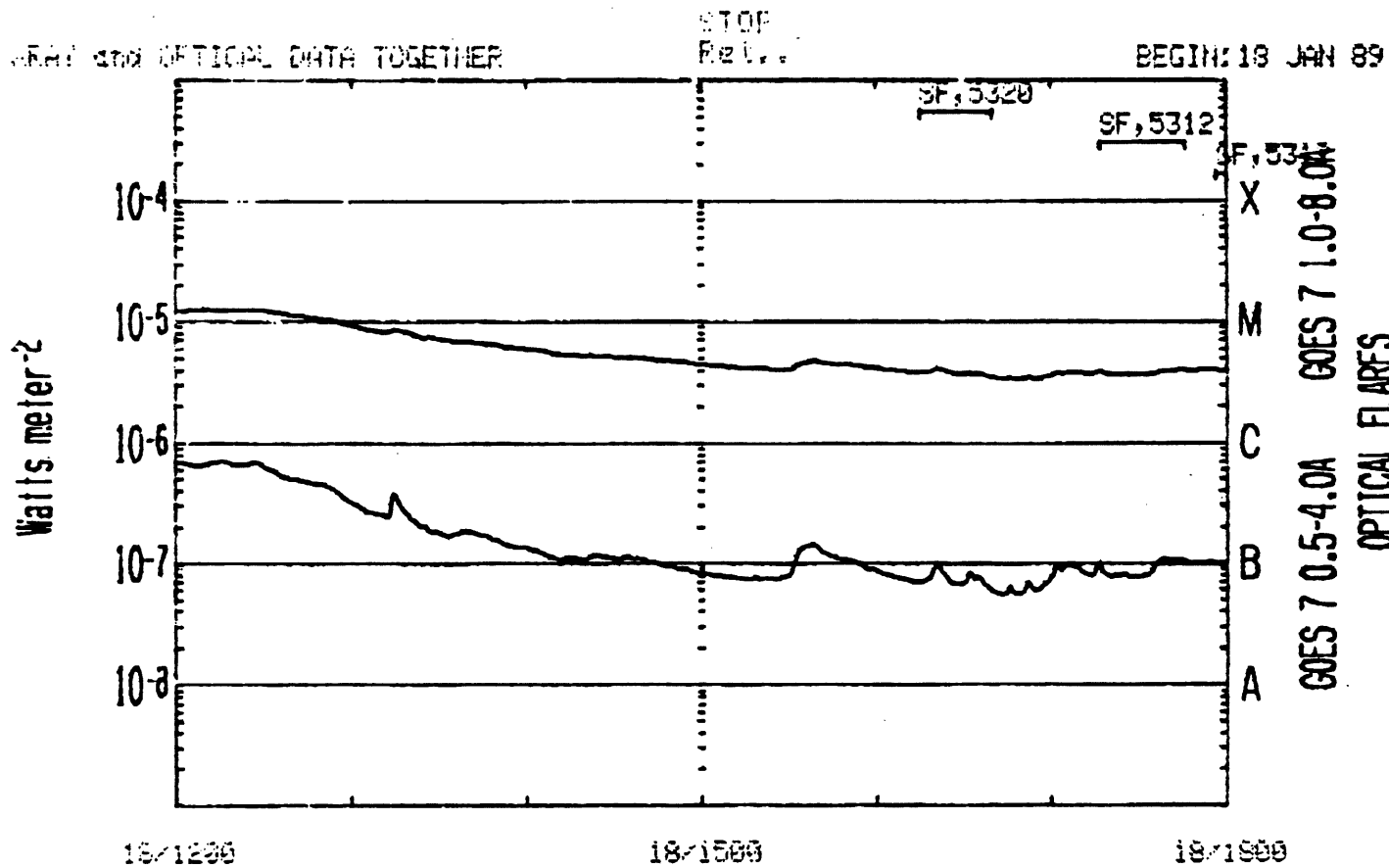
GOES 7 0.5-4.0A GOES 7 1.0-8.0A
OPTICAL FLARES

19:05:00 19:09:00 19:12:00

GOES-7 1 MIN DATA; OPTICAL FLARE DUR, IMP, REGION

SAA's
NIGHT
EUN: 2644LT
21 JAN 89

Jan 18, 1989



GOES-7 1 MIN DATA: OPTICAL FLARE DUR, IMP, REGION

SAA's
NIGHT

RUN: 2050UT
21 JAN 89

Jan 18, 1989

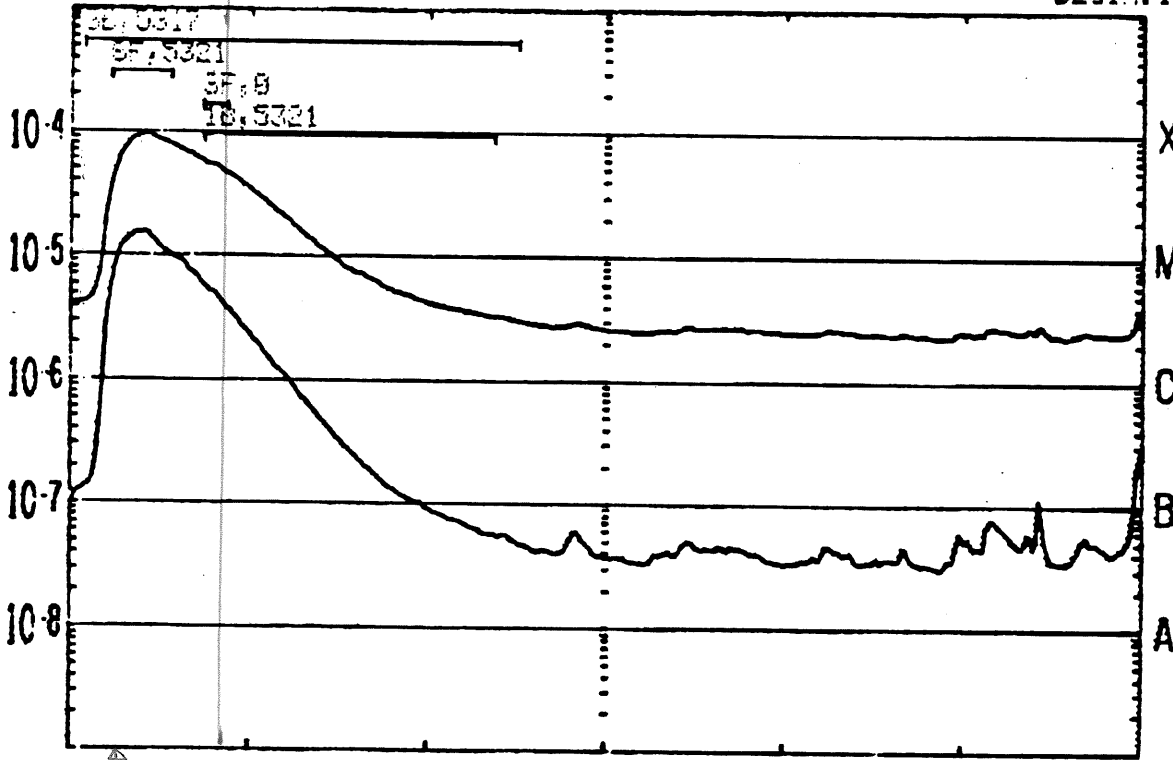
Center of Southern Province Bbb
[18:52] [order only @ 3320

XRAY and OPTICAL DATA TOGETHER

STOP
Ret.,

BEGIN: 18 JAN 89

Watts meter²



GOES 7 0.5-4.0A GOES 7 1.0-8.0A
OPTICAL FLARES

18/1900 max X-rays
~18:20

18/2100

19/0000

SAA's
NIGHT

GOES-7 1 MIN DATA; OPTICAL FLARE DUR, IMP, REGION

FILE: 2053JT
21 JAN 89

This is a 1 order run

INPUT:

| year | day | time | radii | error in radius | angle | error in angle | datatype |
|------|-----|---------|-------|-----------------|-------|----------------|----------|
| 1989 | 18 | 8:25:48 | 3.10 | +/- 0.20 | 324.0 | +/- 0.5 | SMM |
| 1989 | 18 | 9:25:52 | 3.50 | +/- 0.25 | 324.0 | +/- 0.5 | SMM |
| 1989 | 18 | 9:50:39 | 4.10 | +/- 0.30 | 324.0 | +/- 0.5 | SMM |

Structure being measured:
Top of ~~Front~~ *Cloud*

OUTPUT:

START TIME:

Event began at $t = 0 + -0.179E+03 +/- 0.312E+02$ [minutes]
In more convenient units:
Event began at DOY 18 5: 1 +/- 0.312E+02 [minutes]

Origin defined at DOY 18 8: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 117. +/- 29. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.281E+01 +/- 0.180E+00 [solar radii]
c(2) = 0.101E-01 +/- 0.250E-02 [radii/min]
c(2) = 0.117E+03 +/- 0.290E+02 [km/sec]
c(3) = 0.000E+00 +/- 0.000E+00 [radii/min**2]
c(3) = 0.000E+00 +/- 0.000E+00 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

error in c(1)= 0.33269E+00 [radii] see Bevington pg. 114
error in c(2)= 0.40461E-02 [radii/min] see Bevington pg. 114

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00 +/- 0.0000E+00[radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 324. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 8:25 = 0. km/sec

The TOTAL velocity at 8:25 = 117. km/sec

The TANGENTIAL velocity at 9:25 = 0. km/sec

The TOTAL velocity at 9:25 = 117. km/sec

The TANGENTIAL velocity at 9:50 = 0. km/sec

The TOTAL velocity at 9:50 = 117. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.50

Standard Deviation in start time measurement = 0.356E+02

Error in time = 0.24756E+02 using best fit method

See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.246E-01

Reduced Chi Squared = 0.155E+00

Chi Squared = 0.155E+00

The probability for exceeding chi square = 0.875E+00

The correlation coefficient = 0.939E+00

The probability that no LINEAR correlation exists between the variables = 0.2232E+00

SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

| year | doy | time | radii | error in radius | error in angle | datatype |
|------|-----|---------|-------|-----------------|----------------|----------|
| 1989 | 18 | 8:25:48 | 3.10 | +/- 0.20 | 324.0 +/- 0.5 | SMM |
| 1989 | 18 | 9:25:52 | 3.50 | +/- 0.25 | 324.0 +/- 0.5 | SMM |
| 1989 | 18 | 9:50:39 | 4.10 | +/- 0.30 | 324.0 +/- 0.5 | SMM |

Structure being measured:

Top of Front

OUTPUT:

START TIME:

tstart=DOY 18 8:39 from derivative = 0

Event begins at 3.06 Solar Radii

Origin defined at DOY 18 8: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.800E-01 +/- 0.860E-07 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.339E+01 +/- 0.680E-06 [solar radii]
c(2) = -0.164E-01 +/- 0.288E-07 [radii/min]
c(2) = -0.191E+03 +/- 0.334E-03 [km/sec]
c(3) = 0.207E-03 +/- 0.222E-09 [radii/min**2]
c(3) = 0.800E-01 +/- 0.860E-07 [km/sec**2]

ANGULAR INFORMATION:

ANGULAR ACCELERATION= 0.0000E+00 +/- 0.0000E+00[radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 324. +/- 0. [degrees]
a(2) = 0.000E+00 +/- 0.000E+00 [degrees/min]
a(2) = 0.000E+00 +/- 0.000E+00 [rad/sec]
a(3) = 0.000E+00 +/- 0.000E+00 [degrees/min**2]
a(3) = 0.000E+00 +/- 0.000E+00 [rad/sec**2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 8:25 = 0. km/sec

The TOTAL velocity at 8:25 = -67. km/sec

The TANGENTIAL velocity at 9:25 = 0. km/sec

The TOTAL velocity at 9:25 = 221. km/sec

The TANGENTIAL velocity at 9:50 = 0. km/sec

The TOTAL velocity at 9:50 = 340. km/sec

The following info is for estimating goodness of the fit

Number data points = number of coefficients. No error analysis is possible.

Correlation coefficient is not computable!