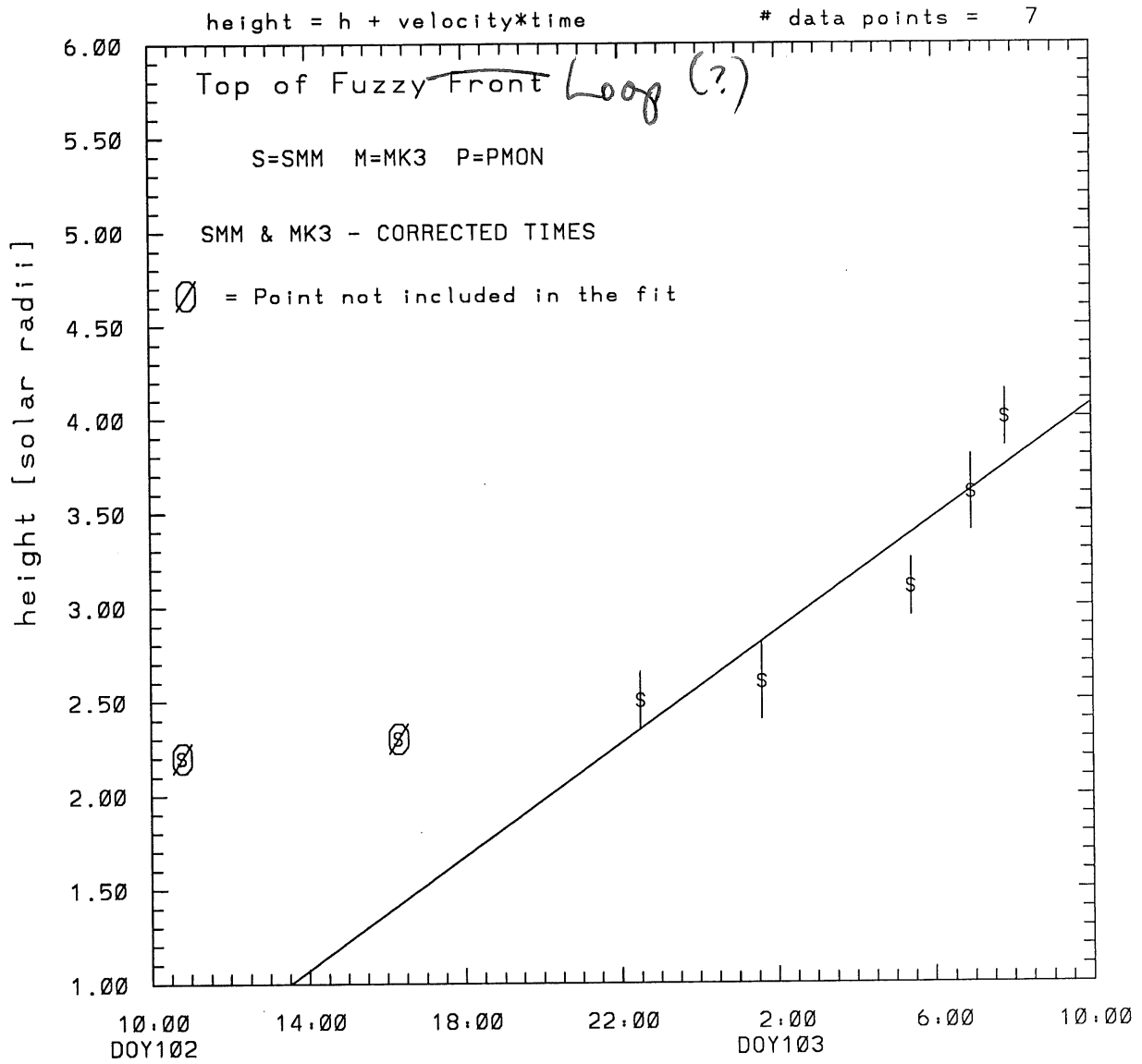
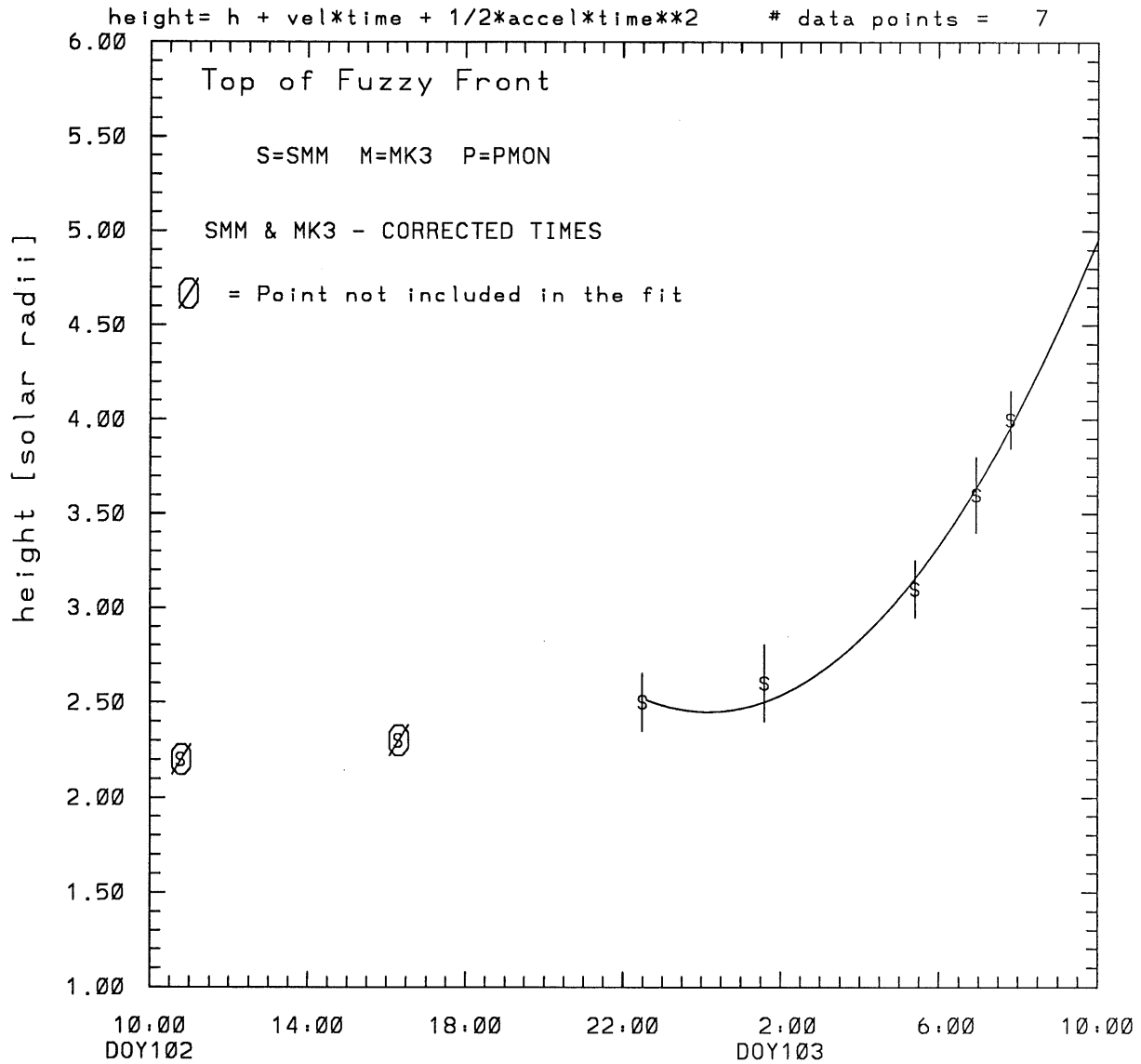


SMM C/P 1989 DOY102 310 +/- 0 degrees



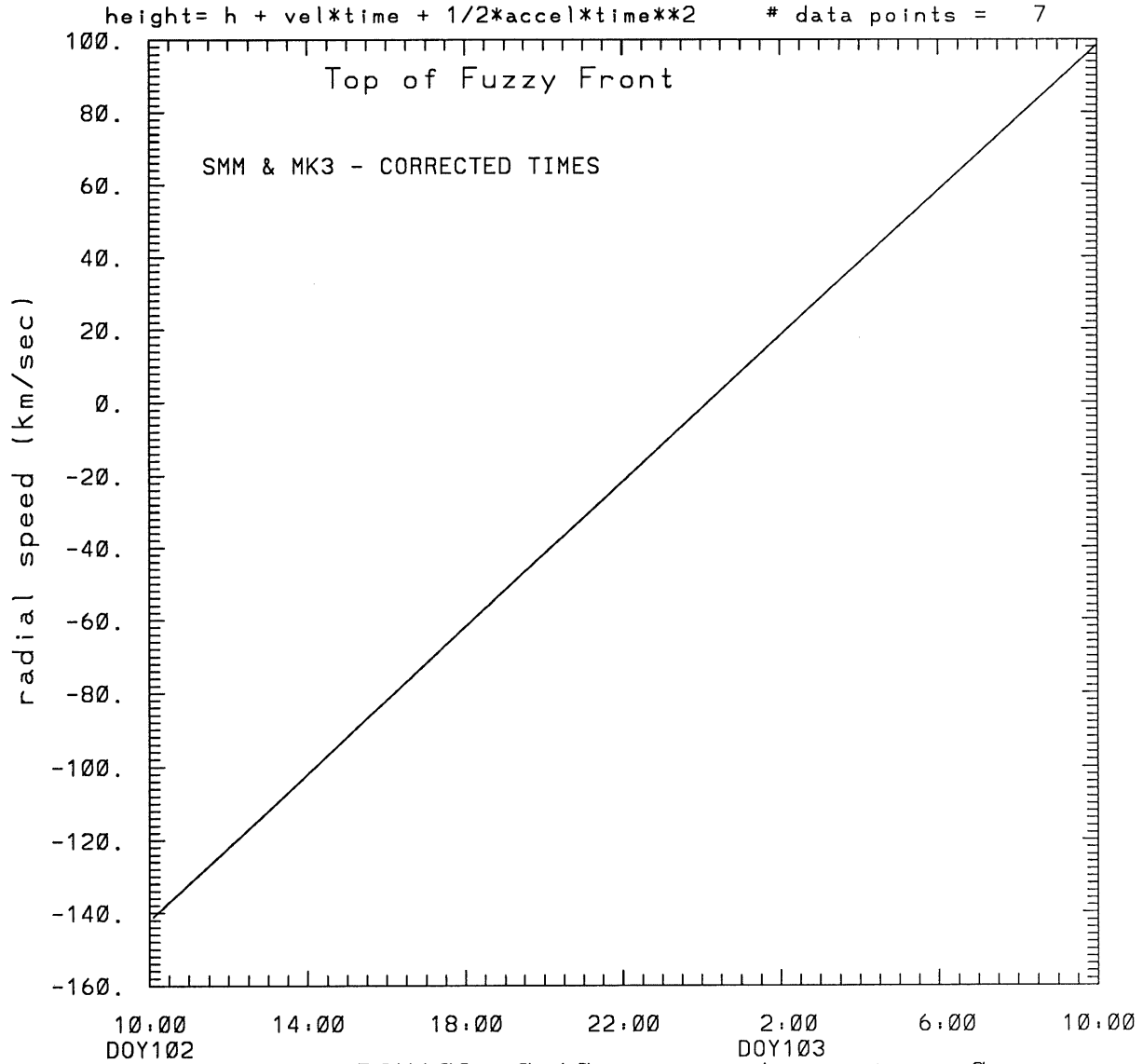
tstart=DOY102 13:31 +/- 65.9 [min.]
radial velocity= 29. +/- 5. [km/sec]

SMM C/P 1989 DOY102 310 +/- 0 degrees



tstart=DOY103 0.10 from derivative=0
Event begins at 2.45 Solar Radii
radial acceleration = 0.0028 +/- 0.0003 [km/sec**2]

SMM C/P 1989 DOY102 310 +/- 0 degrees



tstart=DOY103 0:10 from derivative=0
Event begins at 2.45 Solar Radii
radial acceleration=0.279E-02 km/sec**2

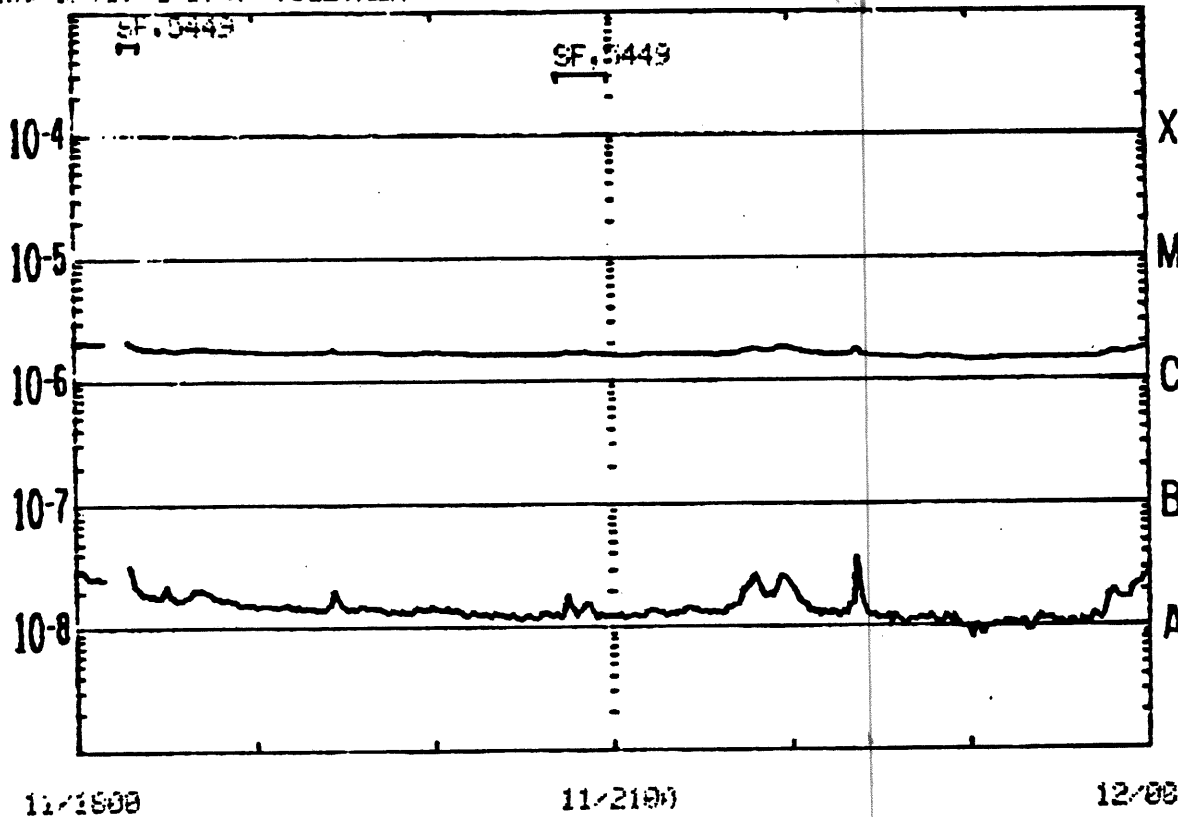
1989 Day 101

SAA and OPTICAL DATA TOGETHER

STOP
Ret..

BEGIN: 11 APR 89

Watts meter²



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

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

SAA's
NIGHT

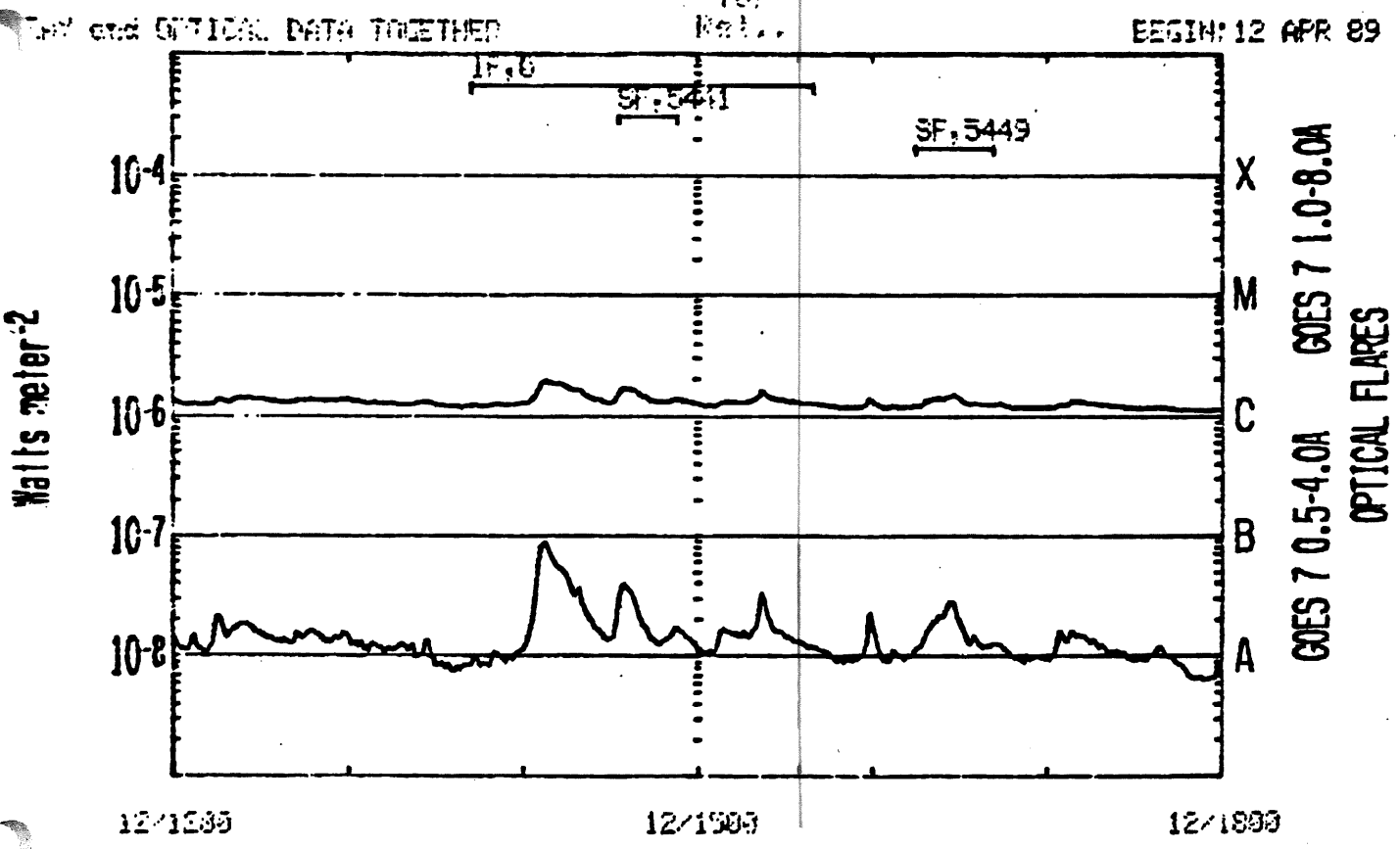
FILE: 1913UT
12 APR 89

See next 2 pages

[slow event with acceleration, could have started anytime]

1989 Day 102

Top of Fuzzy front, 2nd order
[15:33]



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

SAA's NIGHT
RUN: 1669UT
15 APR 89

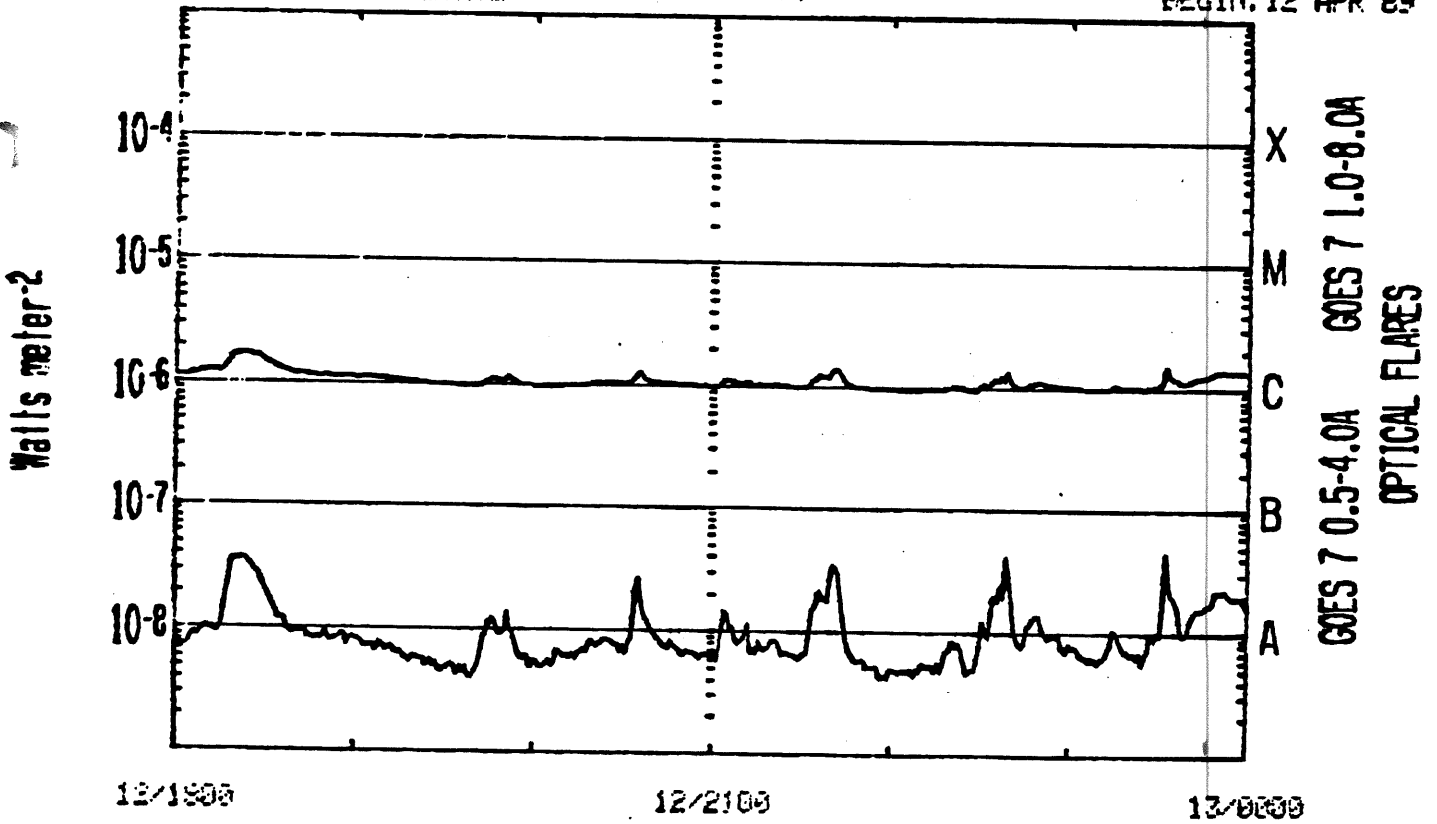
1989 Day 102

Top of Fuzzy Front, using LAST 3
DATA POINTS ONLY, [23:45], 1st order

TOP AND OPTICAL DATA TOGETHER

STOP
WALL

BEGIN: 12 APR 89



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

12/1800 12/2100 12/2800

SAA's
NIGHT

DES-7 1 MIN DATA; OPTICAL FLARE DUR. IMP. REGION

RUN: 1636UT
15 APR 89

This is a 1 order run

INPUT:

year	day	time	radii	radius	error in angle	error in angle	datatype
1989	102	10:46:17	2.20	-----	310.00 +/-	-----	SMM THIS POINT WASN'T USE
1989	102	16:17:11	2.30	-----	310.00 +/-	-----	SMM THIS POINT WASN'T USE
1989	102	22:29:39	2.50	+/- 0.15	310.0 +/-	0.5	SMM
1989	103	1:35:53	2.60	+/- 0.20	310.0 +/-	0.5	SMM
1989	103	5:23:55	3.10	+/- 0.15	310.0 +/-	1.0	SMM
1989	103	6:56:47	3.60	+/- 0.20	310.0 +/-	1.0	SMM
1989	103	7:48:21	4.00	+/- 0.15	310.0 +/-	1.0	SMM

Structure being measured:
Top of Fuzzy Front *Loop (?)*

OUTPUT:

START TIME:

Event began at t = 0 + 0.211E+03 +/- 0.659E+02 [minutes]
In more convenient units:
Event began at DOY 102 13:31 +/- 0.659E+02 [minutes]

Origin defined at DOY102 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 29. +/- 5. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.473E+00 +/- 0.446E+00 [solar radii]
c(2) = 0.250E-02 +/- 0.405E-03 [radii/min]
c(2) = 0.290E+02 +/- 0.470E+01 [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)= 0.68599E+00 [radii] see Bevington pg. 114
error in c(2)= 0.72725E-03 [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) = 310. +/- 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, RADIAL AND TOTAL SPEEDS AT EACH DATA POINT ARE:
The TANGENTIAL speed at 10:46 = 0.000E+00 km/sec

The RADIAL speed at 10:46 = 29. km/sec
The TOTAL speed at 10:46 = 29. km/sec
The TANGENTIAL speed at 16:17 = 0.000E+00 km/sec
The RADIAL speed at 16:17 = 29. km/sec
The TOTAL speed at 16:17 = 29. km/sec
The TANGENTIAL speed at 22:29 = 0.000E+00 km/sec
The RADIAL speed at 22:29 = 29. km/sec
The TOTAL speed at 22:29 = 29. km/sec
The TANGENTIAL speed at 1:35 = 0.000E+00 km/sec
The RADIAL speed at 1:35 = 29. km/sec
The TOTAL speed at 1:35 = 29. km/sec
The TANGENTIAL speed at 5:23 = 0.000E+00 km/sec
The RADIAL speed at 5:23 = 29. km/sec
The TOTAL speed at 5:23 = 29. km/sec
The TANGENTIAL speed at 6:56 = 0.000E+00 km/sec
The RADIAL speed at 6:56 = 29. km/sec
The TOTAL speed at 6:56 = 29. km/sec
The TANGENTIAL speed at 7:48 = 0.000E+00 km/sec
The RADIAL speed at 7:48 = 29. km/sec
The TOTAL speed at 7:48 = 29. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.69
Standard Deviation in start time measurement = 0.441E+03
Error in time = 0.75836E+03 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.550E-01
Reduced Chi Squared = 0.105E+01
Chi Squared = 0.527E+01
The probability for exceeding chi square = 0.998E+00

The correlation coefficient = 0.872E+00
The probability that no LINEAR correlation exists between the variables = 0.10591
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year	doy	time	radii	radius	error in angle	error in angle	datatype
1989	102	10:46:17	2.20	-----	310.00 +/-	----	SMM THIS POINT WASN'T USE
1989	102	16:17:11	2.30	-----	310.00 +/-	----	SMM THIS POINT WASN'T USE
1989	102	22:29:39	2.50	+/- 0.15	310.0 +/-	0.5	SMM
1989	103	1:35:53	2.60	+/- 0.20	310.0 +/-	0.5	SMM
1989	103	5:23:55	3.10	+/- 0.15	310.0 +/-	1.0	SMM
1989	103	6:56:47	3.60	+/- 0.20	310.0 +/-	1.0	SMM
1989	103	7:48:21	4.00	+/- 0.15	310.0 +/-	1.0	SMM

Structure being measured:
Top of Fuzzy Front

OUTPUT:

START TIME:

tstart=DOY103 0:10 from derivative = 0
Event begins at 2.45 Solar Radii
Origin defined at DOY102 10: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.279E-02 +/- 0.314E-03 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.766E+01 +/- 0.819E+00 [solar radii]
c(2) = -0.123E-01 +/- 0.167E-02 [radii/min]
c(2) = -0.142E+03 +/- 0.193E+02 [km/sec]
c(3) = 0.720E-05 +/- 0.813E-06 [radii/min**2]
c(3) = 0.279E-02 +/- 0.314E-03 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.27732E+01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.41468E+00 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.93620E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.87471E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.64976E-05 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.43279E-06 [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

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

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 310. +/- 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, RADIAL AND TOTAL SPEEDS AT EACH DATA POINT ARE:

The TANGENTIAL speed at 10:46 = 0.000E+00 km/sec

The RADIAL speed at 10:46 = -134. km/sec

The TOTAL speed at 10:46 = -134. km/sec

The TANGENTIAL speed at 16:17 = 0.000E+00 km/sec

The RADIAL speed at 16:17 = -79. km/sec

The TOTAL speed at 16:17 = -79. km/sec

The TANGENTIAL speed at 22:29 = 0.000E+00 km/sec

The RADIAL speed at 22:29 = -17. km/sec

The TOTAL speed at 22:29 = -17. km/sec

The TANGENTIAL speed at 1:35 = 0.000E+00 km/sec

The RADIAL speed at 1:35 = 14. km/sec

The TOTAL speed at 1:35 = 14. km/sec

The TANGENTIAL speed at 5:23 = 0.000E+00 km/sec

The RADIAL speed at 5:23 = 52. km/sec

The TOTAL speed at 5:23 = 52. km/sec

The TANGENTIAL speed at 6:56 = 0.000E+00 km/sec

The RADIAL speed at 6:56 = 68. km/sec

The TOTAL speed at 6:56 = 68. km/sec

The TANGENTIAL speed at 7:48 = 0.000E+00 km/sec

The RADIAL speed at 7:48 = 77. km/sec

The TOTAL speed at 7:48 = 77. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.69

Standard Deviation in start time measurement = 0.441E+03

Value of reduced Chi Squared returned from nllst2 = 0.395E-02

Reduced Chi Squared = 0.759E+01

Chi Squared = 0.303E+02

The probability for exceeding chi square = 0.100E+01

For a second order fit 3 correlation coefficients are given:

(Using equation of motion: $r = a + bt + at^2$)

The correlation between the data and the term linear in time = 0.6536E+00

The correlation between the data and the time**2 term = 0.8253E+00

The correlation between the data and the complete equation of motion = 0.3788E+01

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