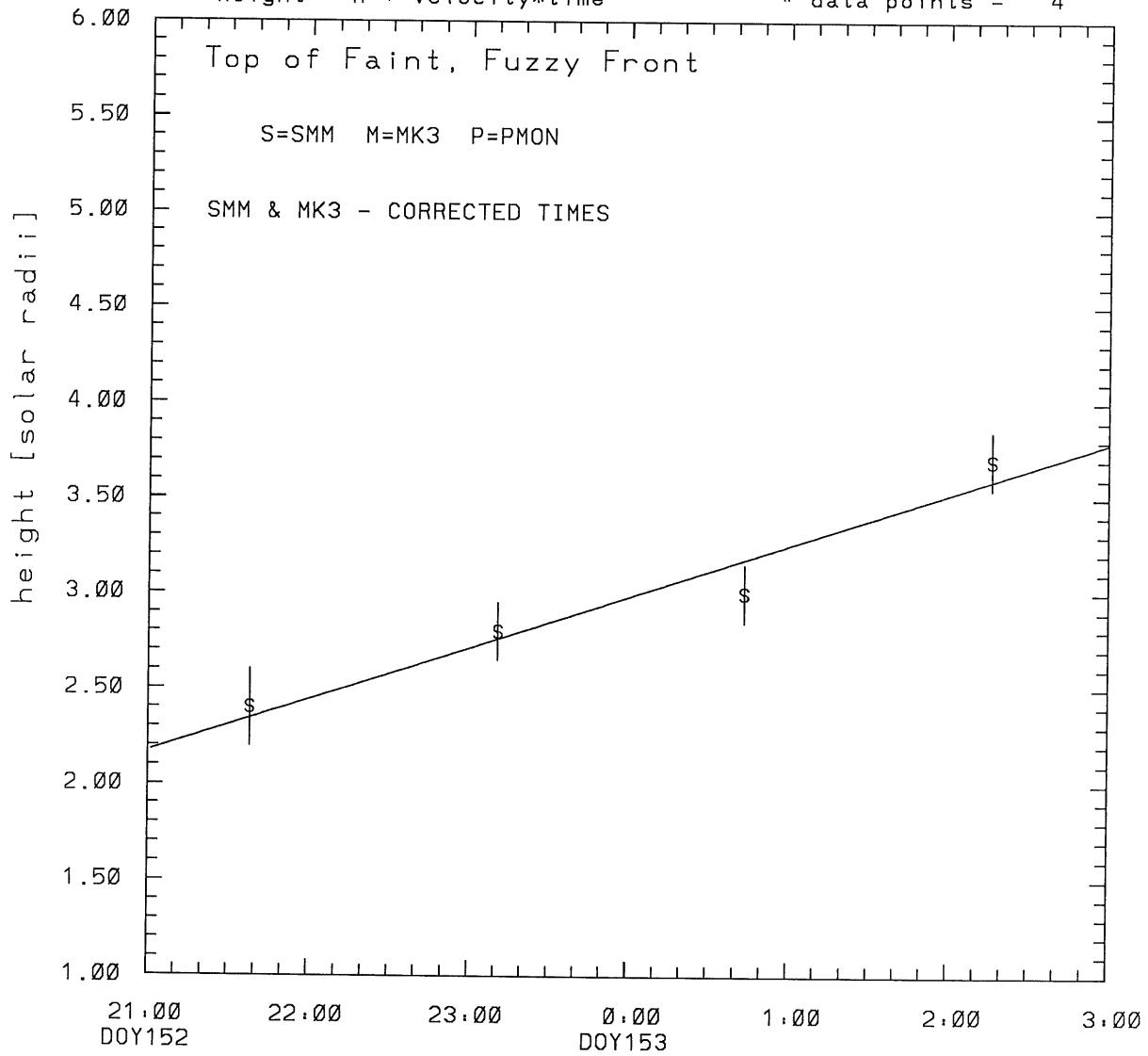


SMM C/P 1989 DOY152 162 +/- 0 degrees

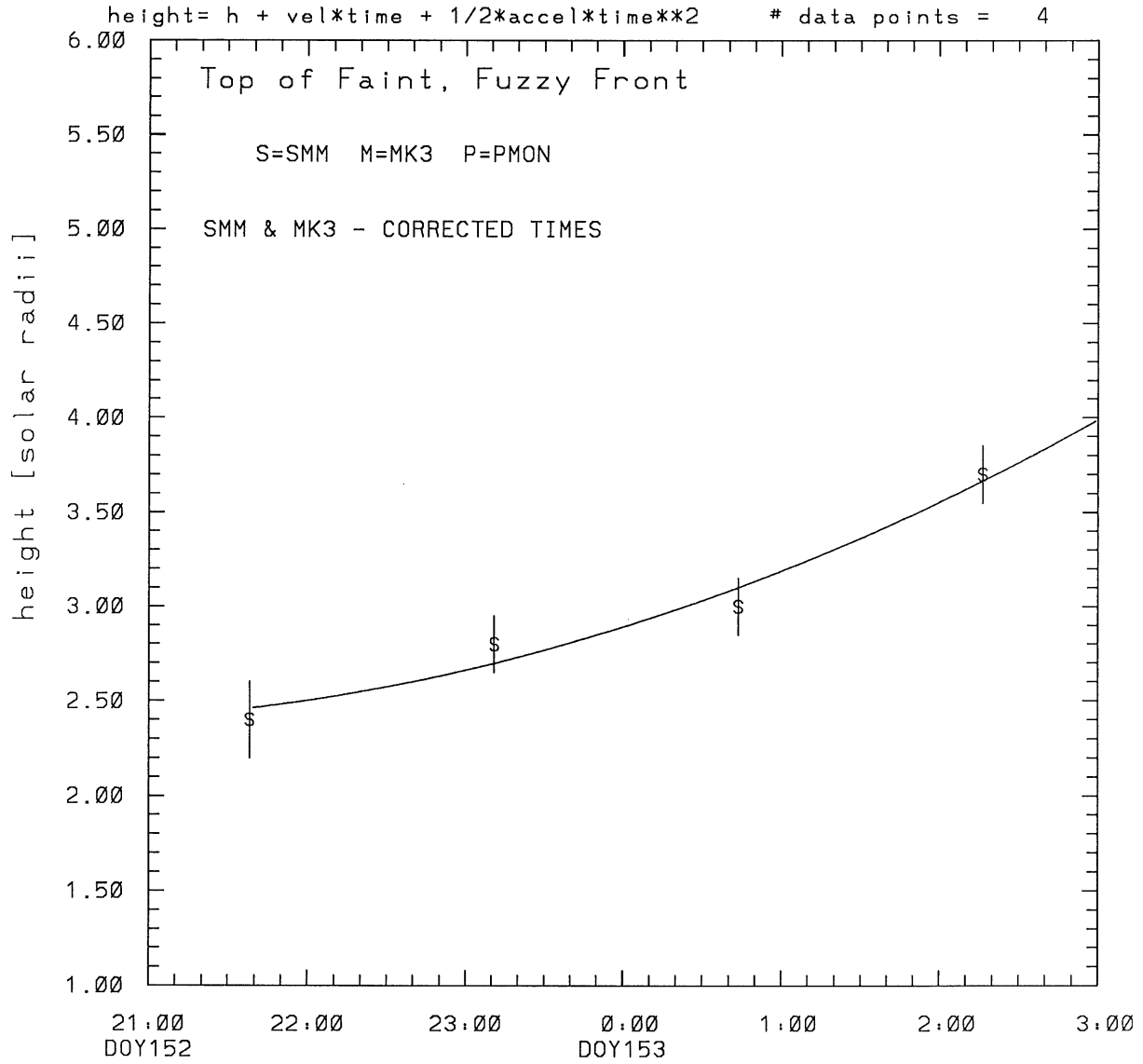
height = h + velocity*time

data points = 4



tstart=DOY152 16:40 +/- 17.5 [min.]
radial velocity= 52. +/- 8. [km/sec]

SMM C/P 1989 DOY152 162 +/- 0 degrees



tstart=DOY152 20: 9 from derivative=0

Event begins at 2.38 Solar Radii

radial acceleration = 0.0037 ± 0.0027 [km/sec**2]

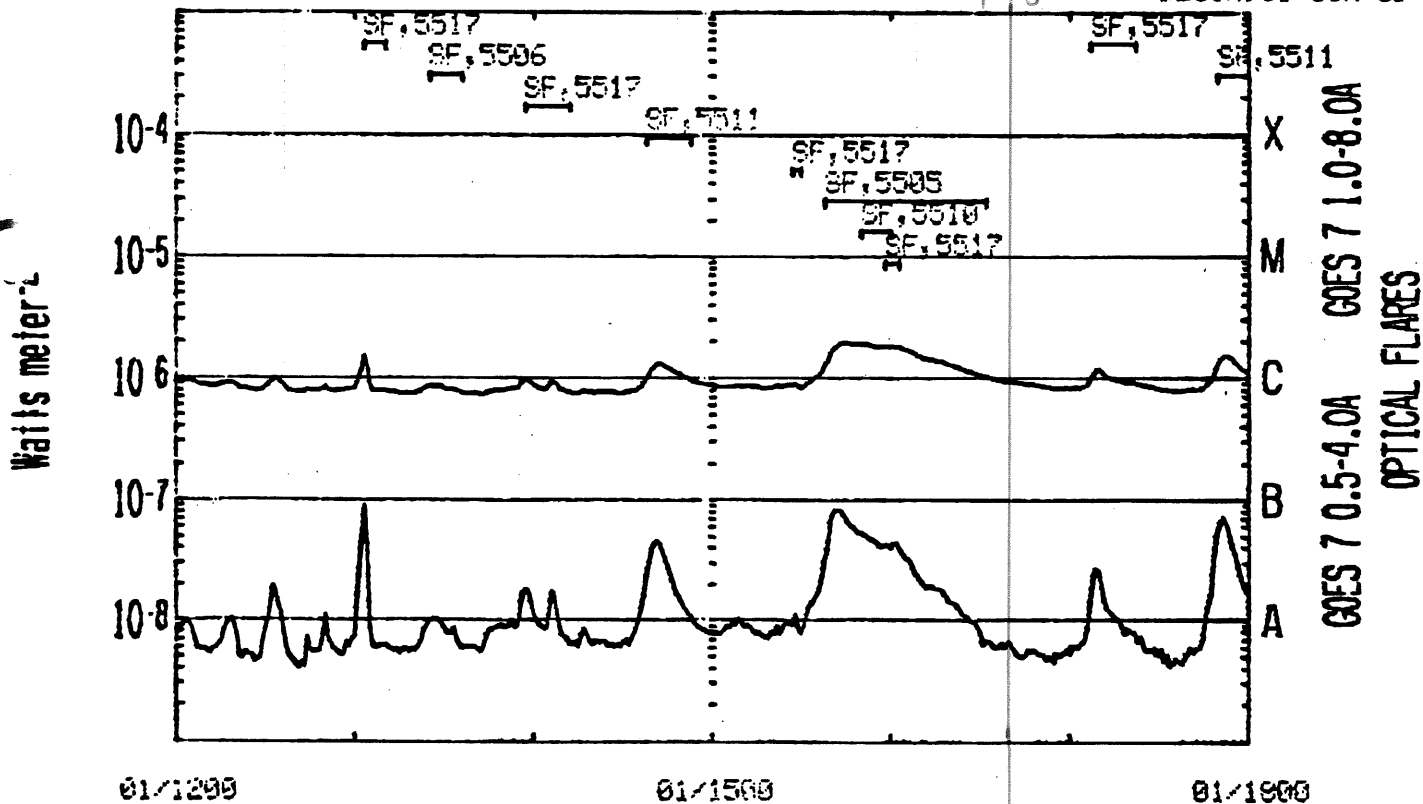
1989 Day 152

Top of Faint Fuzzy Front
center = 170', [16:40], 1st order

SAA and OPTICAL DATA TOGETHER

STOP
Ret..

BEGIN: 01 JUN 89



01/1200

01/1500

01/1800

SAA's
NIGHT

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

RUN: 1430UT
6 JUN 89

see next page

1989

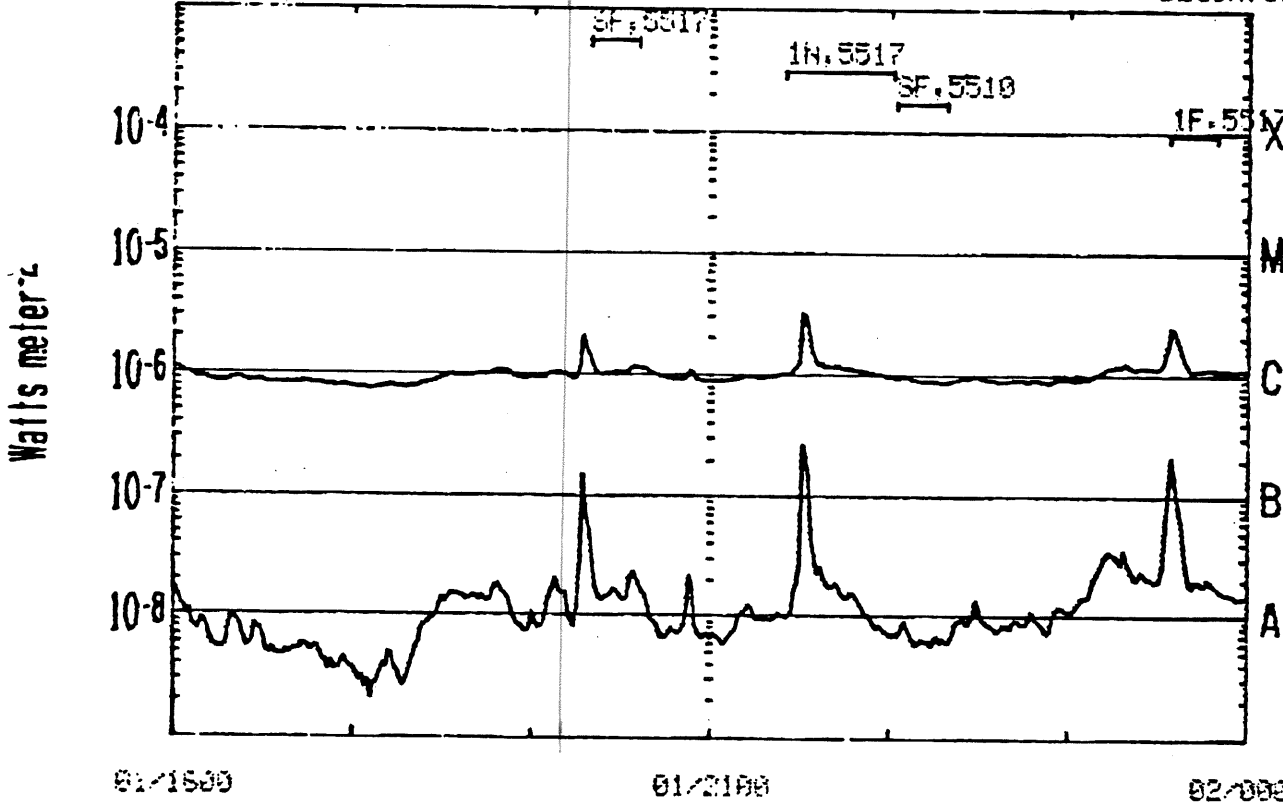
July 152

XRAY and OPTICAL DATA TOGETHER

Top of First Fuzzy Front
center = 1709 [20:09] 2nd order

STOP
Ret..

BEGIN: 01 JUN 89



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

01/1500

01/2100

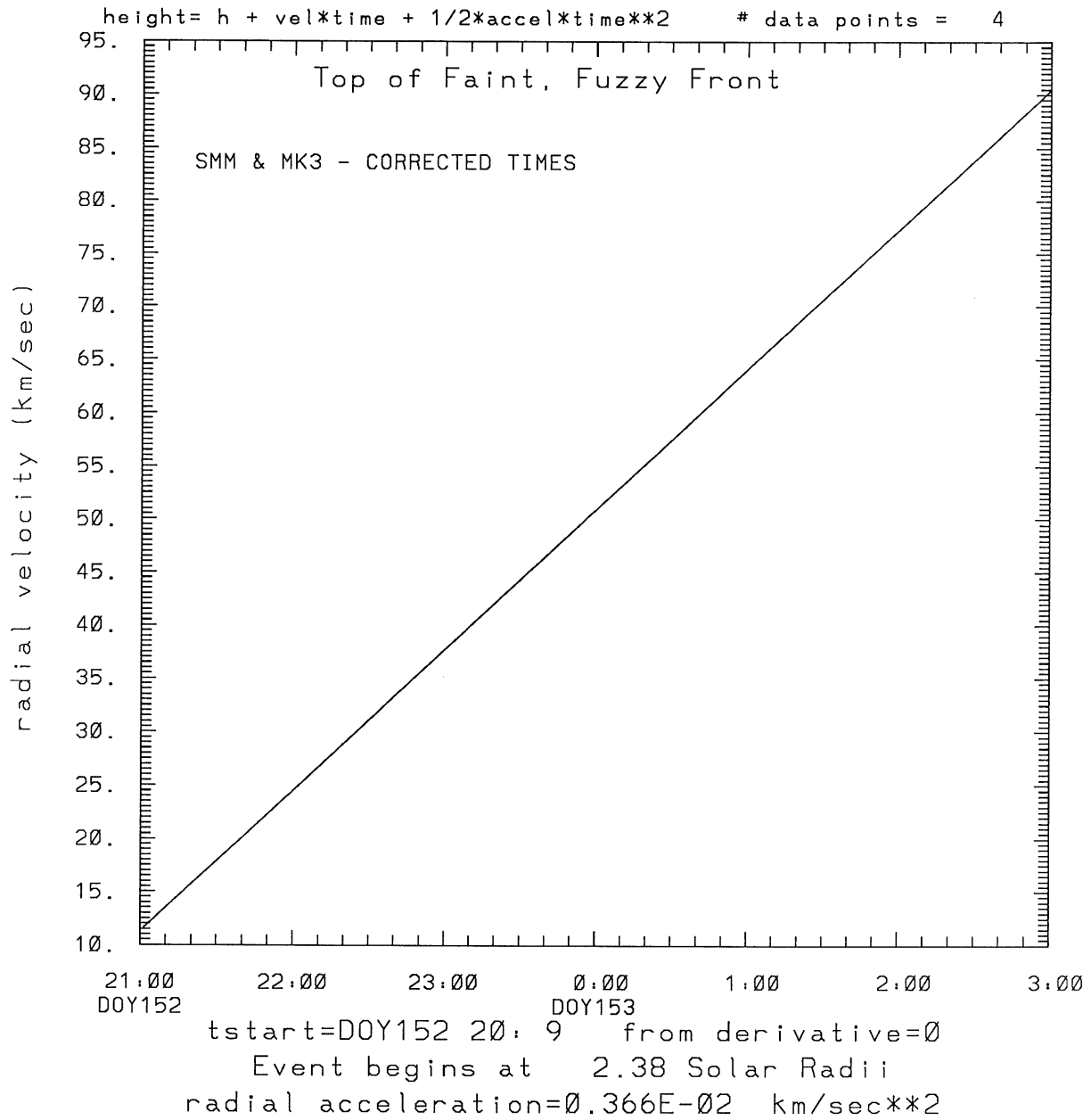
02/0000

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

— SAA's
— NIGHT

RUN: 1435UT
6 JUN 89

SMM C/P 1989 DOY152 162 +/- 0 degrees



This is a 1 order run

INPUT:

year	doy	time	radii	radius	error in	angle	angle	error in	datatype
1989	152	21:38: 8	2.40	+/- 0.20		162.0	+/- 0.5		SMM
1989	152	23:10:55	2.80	+/- 0.15		162.0	+/- 0.5		SMM
1989	153	0:43:41	3.00	+/- 0.15		162.0	+/- 0.5		SMM
1989	153	2:16:28	3.70	+/- 0.15		162.0	+/- 1.0		SMM

Structure being measured:

Top of Faint, Fuzzy Front

OUTPUT:

START TIME:

Event began at t = 0 + -0.260E+03 +/- 0.175E+02 [minutes]

In more convenient units:

Event began at DOY 152 16:40 +/- 0.175E+02 [minutes]

Origin defined at DOY152 21: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 52. +/- 8. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.217E+01 +/- 0.147E+00 [solar radii]
c(2) = 0.450E-02 +/- 0.676E-03 [radii/min]
c(2) = 0.522E+02 +/- 0.784E+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)= 0.15249E+00 [radii] see Bevington pg. 114

error in c(2)= 0.74236E-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) = 162. +/- 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 21:38 = 0. km/sec

The TOTAL velocity at 21:38 = 52. km/sec

The TANGENTIAL velocity at 23:10 = 0. km/sec

The TOTAL velocity at 23:10 = 52. km/sec

The TANGENTIAL velocity at 0:43 = 0. km/sec

The TOTAL velocity at 0:43 = 52. km/sec

The TANGENTIAL velocity at 2:16 = 0. km/sec

The TOTAL velocity at 2:16 = 52. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.54

Standard Deviation in start time measurement = 0.104E+03

Error in time = 0.48390E+02 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.172E-01

Reduced Chi Squared = 0.725E-01

Chi Squared = 0.145E+00

The probability for exceeding chi square = 0.983E+00

The correlation coefficient = 0.973E+00

The probability that no LINEAR correlation exists between the variables = 0.2683E-01

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	datatype
1989	152	21:38: 8	2.40	+/- 0.20	162.0	+/- 0.5		SMM
1989	152	23:10:55	2.80	+/- 0.15	162.0	+/- 0.5		SMM
1989	153	0:43:41	3.00	+/- 0.15	162.0	+/- 0.5		SMM
1989	153	2:16:28	3.70	+/- 0.15	162.0	+/- 1.0		SMM

Structure being measured:

Top of Faint, Fuzzy Front

OUTPUT:

START TIME:

tstart=DOY152 20: 9 from derivative = 0

Event begins at 2.38 Solar Radii

Origin defined at DOY152 21: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.366E-02 +/- 0.266E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.241E+01 +/- 0.216E+00 [solar radii]

c(2) = 0.975E-03 +/- 0.262E-02 [radii/min]

c(2) = 0.113E+02 +/- 0.304E+02 [km/sec]

c(3) = 0.947E-05 +/- 0.687E-05 [radii/min**2]

c(3) = 0.366E-02 +/- 0.266E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.24680E+00 [radii] Bevington pg 154 (8-30)

Exact error in c(1) = 0.10176E+00 [radii] Bevington pg 154 (8-28)

Approximate error in c(2) = 0.33541E-02 [radii/min] Bevington pg 154 (8-30)

Exact error in c(2) = 0.17028E-02 [radii/min] Bevington pg 154 (8-28)

Approximate error in c(3) = 0.92101E-05 [radii/min**] Bevington pg 154 (8-30)

Exact error in c(3) = 0.46023E-05 [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) = 162. +/- 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 21:38 = 0. km/sec

The TOTAL velocity at 21:38 = 20. km/sec

The TANGENTIAL velocity at 23:10 = 0. km/sec

The TOTAL velocity at 23:10 = 40. km/sec

The TANGENTIAL velocity at 0:43 = 0. km/sec

The TOTAL velocity at 0:43 = 60. km/sec

The TANGENTIAL velocity at 2:16 = 0. km/sec

The TOTAL velocity at 2:16 = 81. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.54

Standard Deviation in start time measurement = 0.104E+03

Value of reduced Chi Squared returned from nllst2 = 0.132E-01

Reduced Chi Squared = 0.592E-01

Chi Squared = 0.592E-01

The probability for exceeding chi square = 0.908E+00

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 = 0.9197E+00

The correlation between the data and the time**2 term = 0.9727E+00

The correlation between the data and the complete equation of motion = 0.9660E+00

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