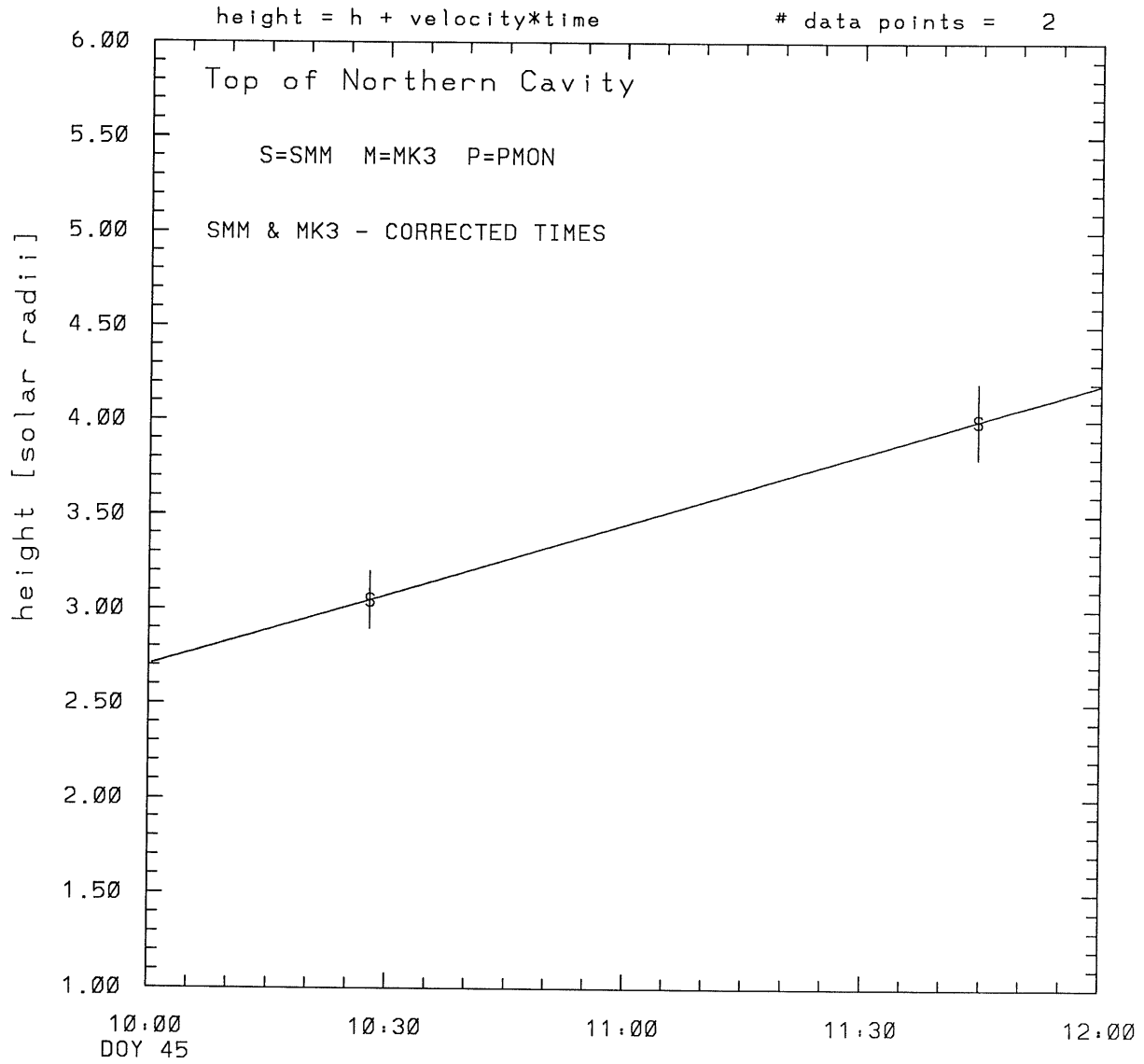
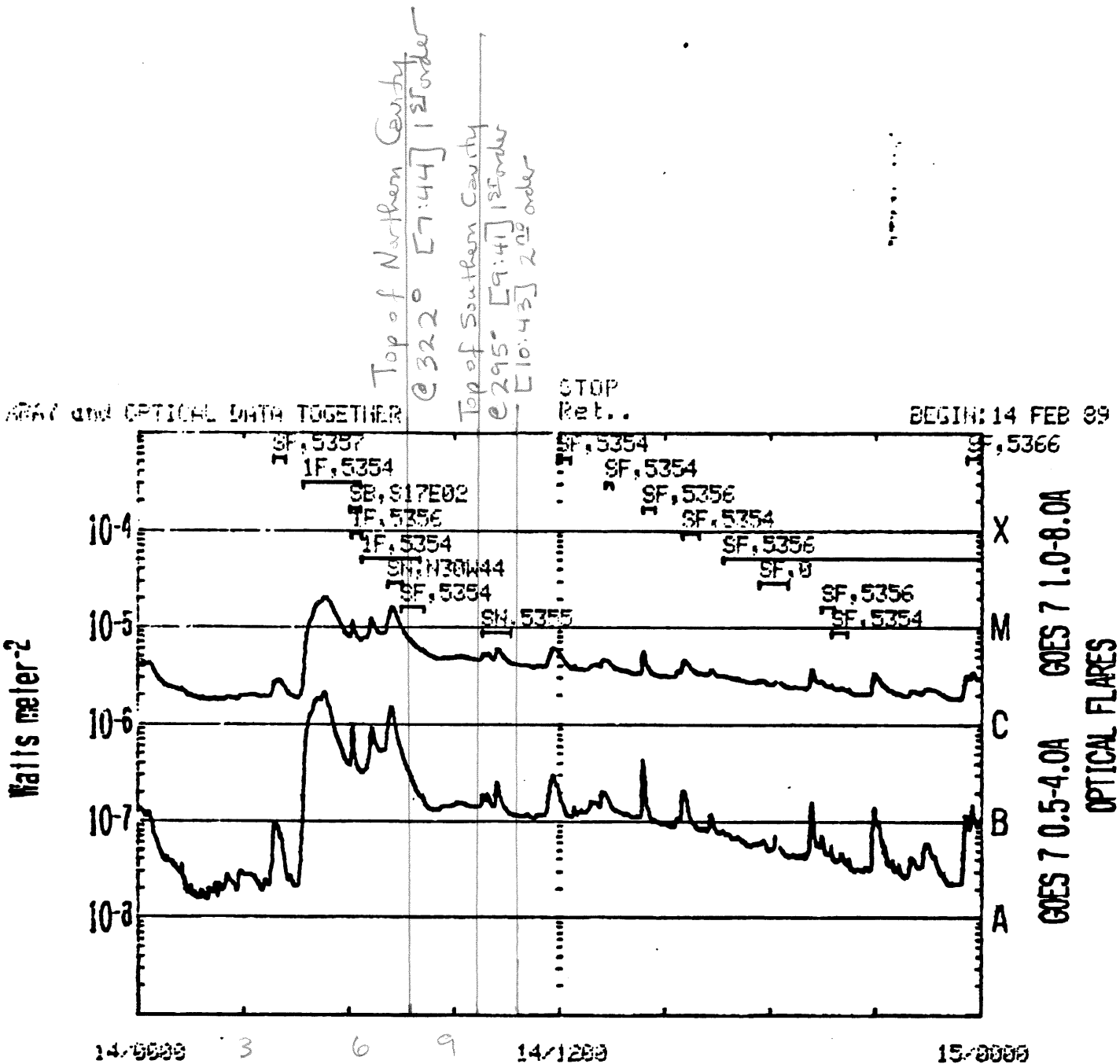


SMM C/P 1989 DOY 45 325 +/- 0 degrees



tstart=DOY 45 7:44 +/- 0.0 [min.]  
radial velocity= 144. +/- 0. [km/sec]

1989 Day 45



SAA's NIGHT

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

RUN: 155 LUT  
15 FEB 89

24 hour plot ←

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

| year | doy | time     | radii | error in radius | angle | error in angle | datatype |
|------|-----|----------|-------|-----------------|-------|----------------|----------|
| 1989 | 45  | 10:27:50 | 3.05  | +/- 0.15        | 325.0 | +/- 0.5        | SMM      |
| 1989 | 45  | 11:44:33 | 4.00  | +/- 0.20        | 325.0 | +/- 0.5        | SMM      |

\*\*\*\*\*

Structure being measured:

Top of Northern Cavity

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\*\*\*\*\*

OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.138E+03 \pm 0.000E+00$  [minutes]

In more convenient units:

Event began at DOY 45 7:44  $\pm 0.000E+00$  [minutes]

Origin defined at DOY 45 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 144.  $\pm$  0. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.271E+01  $\pm$  0.136E-05 [solar radii]  
c(2) = 0.124E-01  $\pm$  0.205E-07 [radii/min]  
c(2) = 0.144E+03  $\pm$  0.238E-03 [km/sec]  
c(3) = 0.000E+00  $\pm$  0.000E+00 [radii/min\*\*2]  
c(3) = 0.000E+00  $\pm$  0.000E+00 [km/sec\*\*2]

ANGULAR INFORMATION:

ANGULAR VELOCITY = 0.0000E+00  $\pm$  0.0000E+00 [radians/sec]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = 325.  $\pm$  0. [degrees]  
a(2) = 0.000E+00  $\pm$  0.000E+00 [degrees/min]  
a(2) = 0.000E+00  $\pm$  0.000E+00 [rad/sec]  
a(3) = 0.000E+00  $\pm$  0.000E+00 [degrees/min\*\*2]  
a(3) = 0.000E+00  $\pm$  0.000E+00 [rad/sec\*\*2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 10:27 = 0. km/sec

The TOTAL velocity at 10:27 = 144. km/sec

The TANGENTIAL velocity at 11:44 = 0. km/sec

The TOTAL velocity at 11:44 = 144. km/sec

\*\*\*\*\*

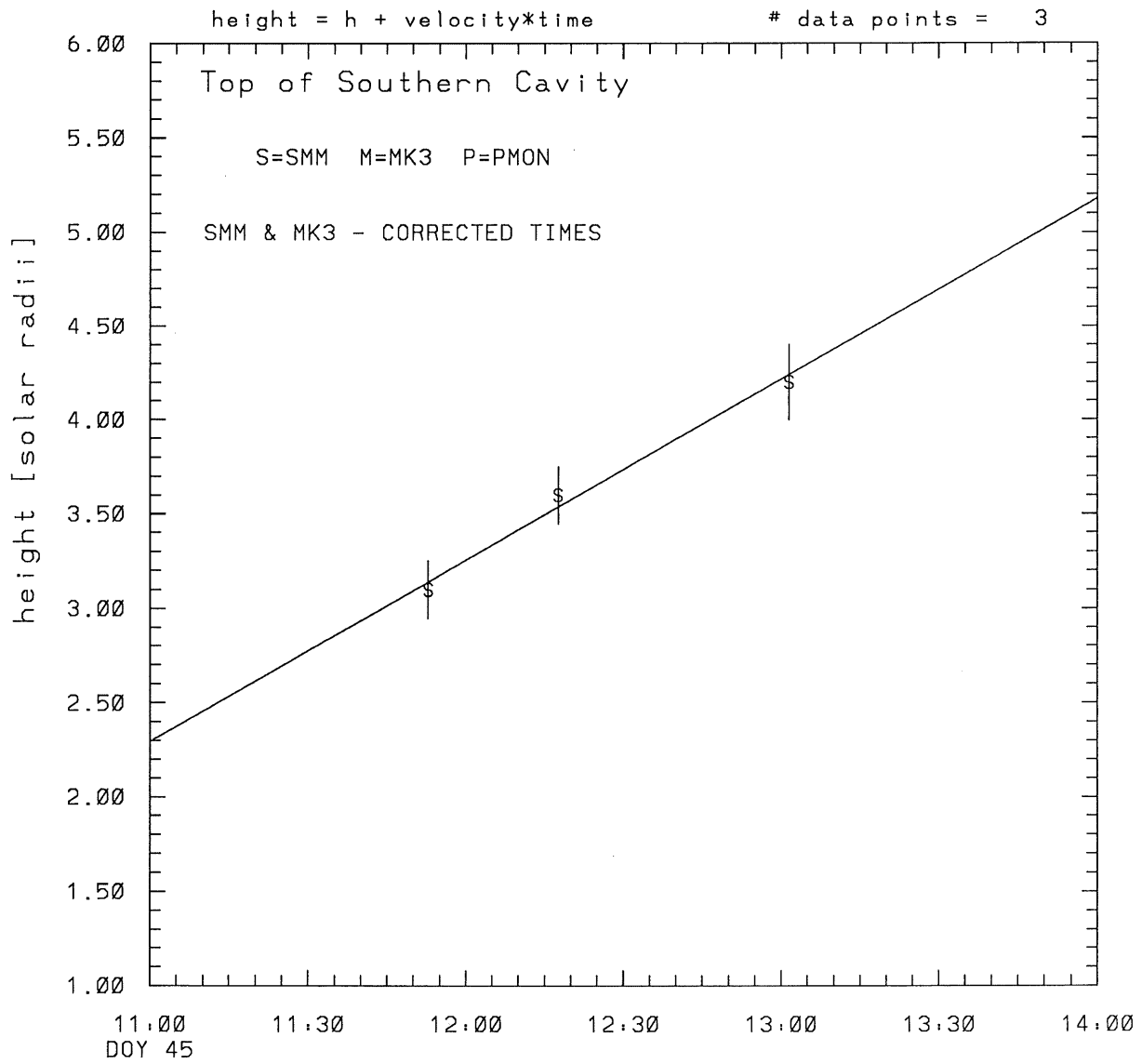
The following info is for estimating goodness of the fit

\*\*\*\*\*

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

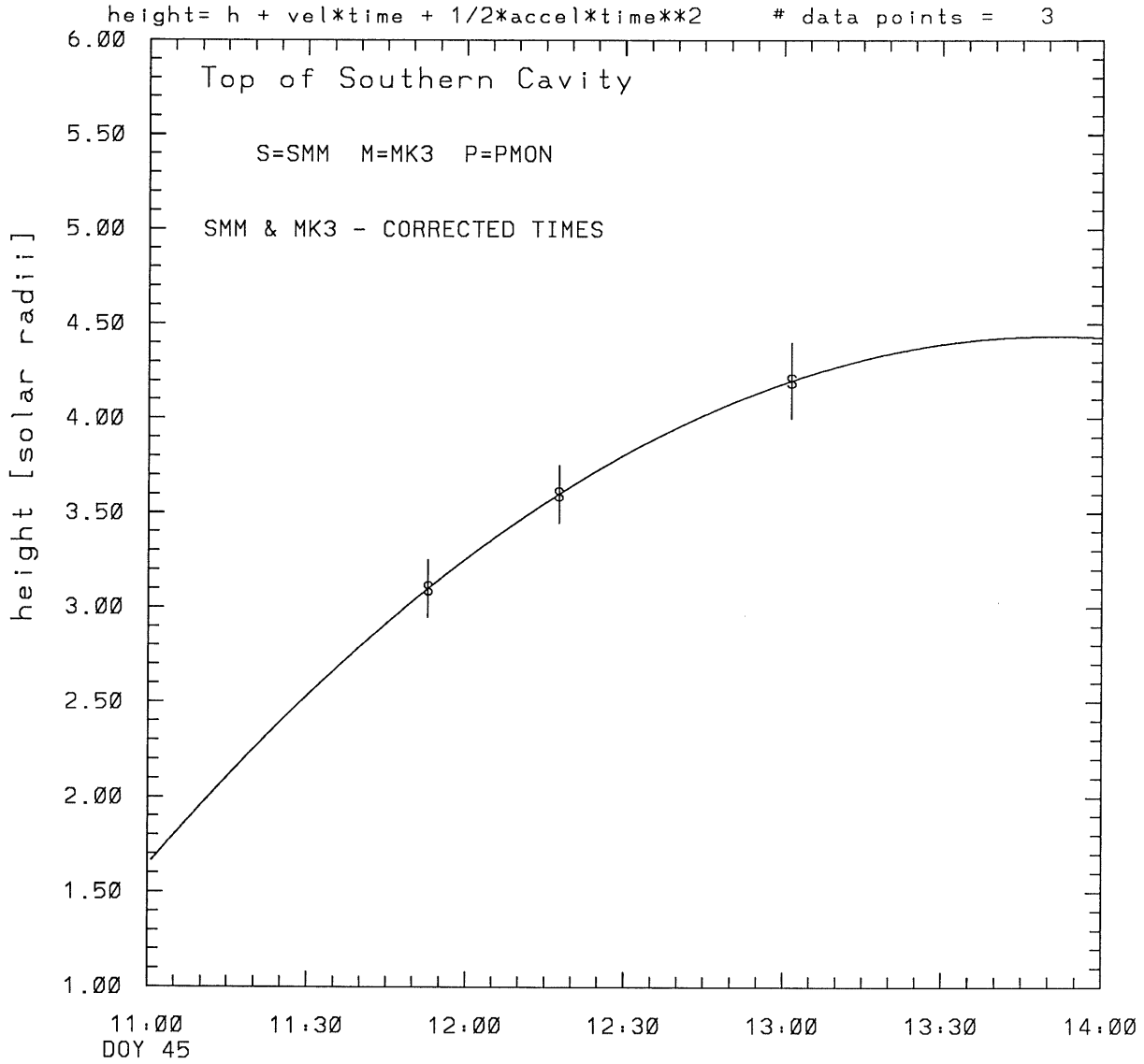
Correlation coefficient is not computable!

SMM C/P 1989 DOY 45 295 +/- 0 degrees



tstart=DOY 45 9:41 +/- 5.0 [min.]  
radial velocity= 186. +/- 16. [km/sec]

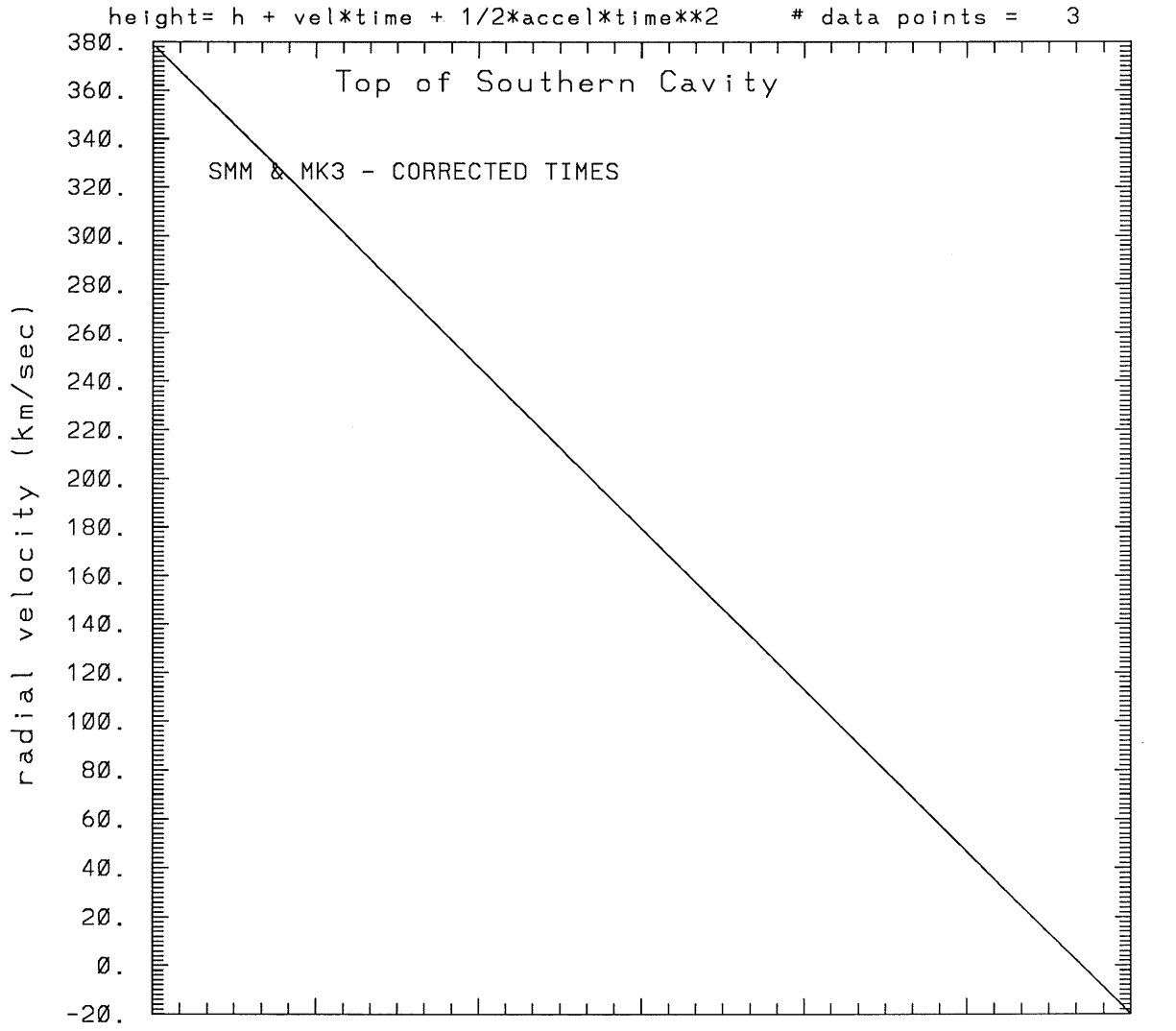
SMM C/P 1989 DOY 45 295 +/- 0 degrees



tstart=DOY 45 10:43 +/- 0.0 [min.]

radial acceleration =  $-0.0369 \pm 0.0000$  [km/sec\*\*2]

SMM C/P 1989 DOY 45 295 +/- 0 degrees



DOY 45

tstart=DOY 45 10:43 +/- 0.0 [min.]

radial acceleration=-.369E-01 km/sec\*\*2

\*\*\*\*\*

This is a 1 order run

\*\*\*\*\*

\*\*\*\*\*

INPUT:

\*\*\*\*\*

| year | day | time     | radii | error in radius | angle | error in angle | datatype |
|------|-----|----------|-------|-----------------|-------|----------------|----------|
| 1989 | 45  | 11:52:50 | 3.10  | +/- 0.15        | 295.0 | +/- 0.5        | SMM      |
| 1989 | 45  | 12:17:34 | 3.60  | +/- 0.15        | 295.0 | +/- 0.5        | SMM      |
| 1989 | 45  | 13: 1:30 | 4.20  | +/- 0.20        | 295.0 | +/- 0.5        | SMM      |

\*\*\*\*\*

Structure being measured:

Top of Southern Cavity

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OUTPUT:

\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.808E+02 +/- 0.495E+01$  [minutes]

In more convenient units:

Event began at DOY 45 9:41 +/- 0.495E+01 [minutes]

Origin defined at DOY 45 11: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 186. +/- 16. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.229E+01 +/- 0.114E+00$  [solar radii]  
 $c(2) = 0.160E-01 +/- 0.139E-02$  [radii/min]  
 $c(2) = 0.186E+03 +/- 0.161E+02$  [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  $c(1) = 0.15384E+00$  [radii] see Bevington pg. 114

error in  $c(2) = 0.17356E-02$  [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) = 295. +/- 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 11:52 = 0. km/sec

The TOTAL velocity at 11:52 = 186. km/sec

The TANGENTIAL velocity at 12:17 = 0. km/sec

The TOTAL velocity at 12:17 = 186. km/sec

The TANGENTIAL velocity at 13: 1 = 0. km/sec

The TOTAL velocity at 13: 1 = 186. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.55

Standard Deviation in start time measurement = 0.284E+02

Error in time = 0.53284E+01 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.384E-02

Reduced Chi Squared = 0.146E-01

Chi Squared = 0.146E-01

The probability for exceeding chi square = 0.951E+00

The correlation coefficient = 0.994E+00

The probability that no LINEAR correlation exists between the variables = 0.6851E-01

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

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This is a 2 order run

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\*\*\*\*\*

INPUT:

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| year | day | time     | radii | error in radius | angle | error in angle | datatype |
|------|-----|----------|-------|-----------------|-------|----------------|----------|
| 1989 | 45  | 11:52:50 | 3.10  | +/- 0.15        | 295.0 | +/- 0.5        | SMM      |
| 1989 | 45  | 12:17:34 | 3.60  | +/- 0.15        | 295.0 | +/- 0.5        | SMM      |
| 1989 | 45  | 13: 1:30 | 4.20  | +/- 0.20        | 295.0 | +/- 0.5        | SMM      |

\*\*\*\*\*

Structure being measured:

Top of Southern Cavity

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OUTPUT:

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START TIME:

Event began at  $t = 0 + -0.186E+02 +/- 0.000E+00$  [minutes]

In more convenient units:

Event began at DOY 45 10:43 +/- 0.000E+00 [minutes]

Origin defined at DOY 45 11: 0

RADIAL INFORMATION:

RADIAL ACCELERATION =  $-0.369E-01 +/- 0.201E-06$  km/sec\*\*2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) =  $0.164E+01 +/- 0.366E-05$  [solar radii]  
c(2) =  $0.327E-01 +/- 0.912E-07$  [radii/min]  
c(2) =  $0.379E+03 +/- 0.106E-02$  [km/sec]  
c(3) =  $-0.955E-04 +/- 0.519E-09$  [radii/min\*\*2]  
c(3) =  $-0.369E-01 +/- 0.201E-06$  [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) = 295. +/- 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]

$$a(3) = 0.000E+00 \pm 0.000E+00 \text{ [rad/sec**2]}$$

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 11:52 = 0. km/sec

The TOTAL velocity at 11:52 = 262. km/sec

The TANGENTIAL velocity at 12:17 = 0. km/sec

The TOTAL velocity at 12:17 = 207. km/sec

The TANGENTIAL velocity at 13: 1 = 0. km/sec

The TOTAL velocity at 13: 1 = 110. 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!