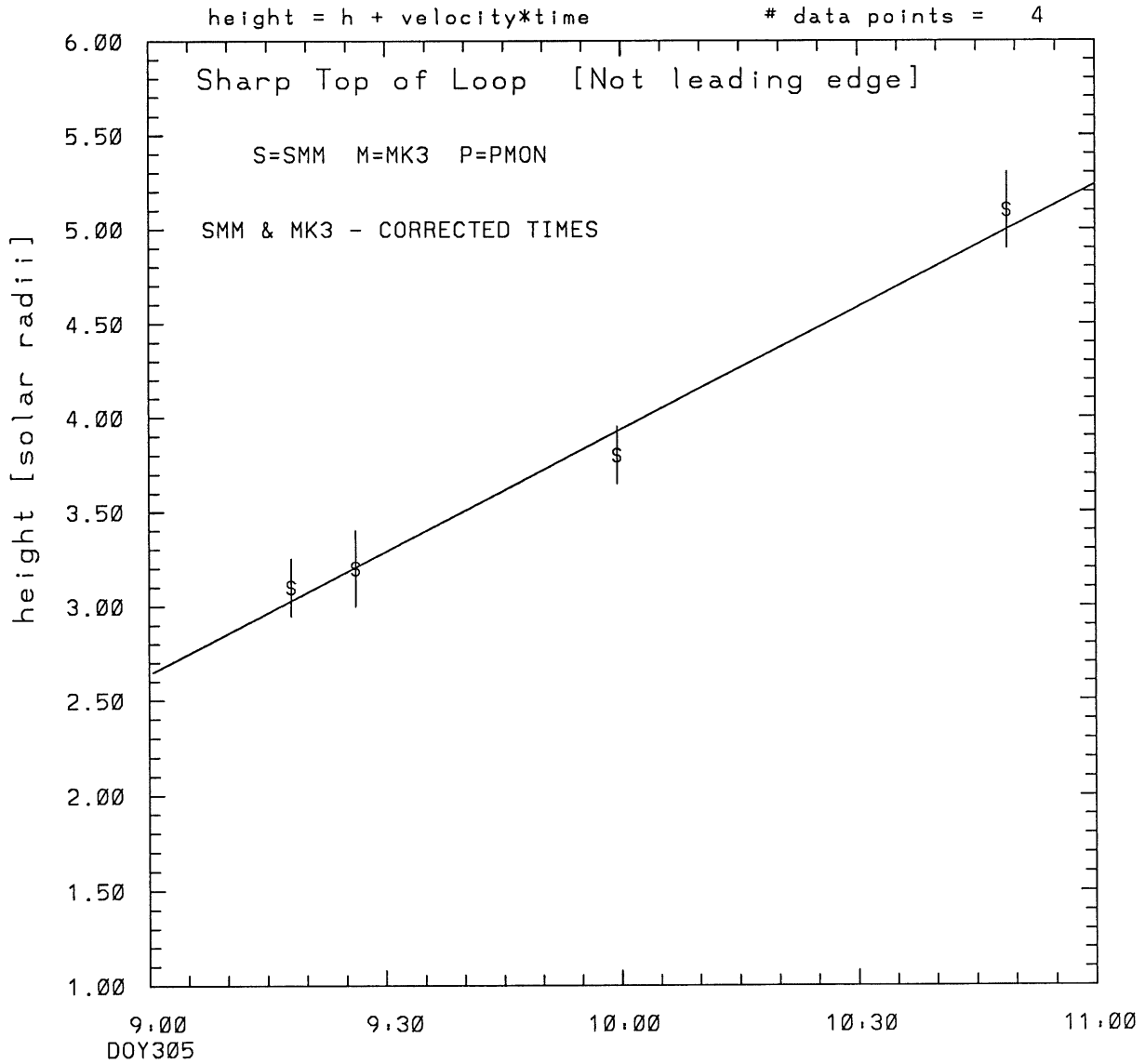
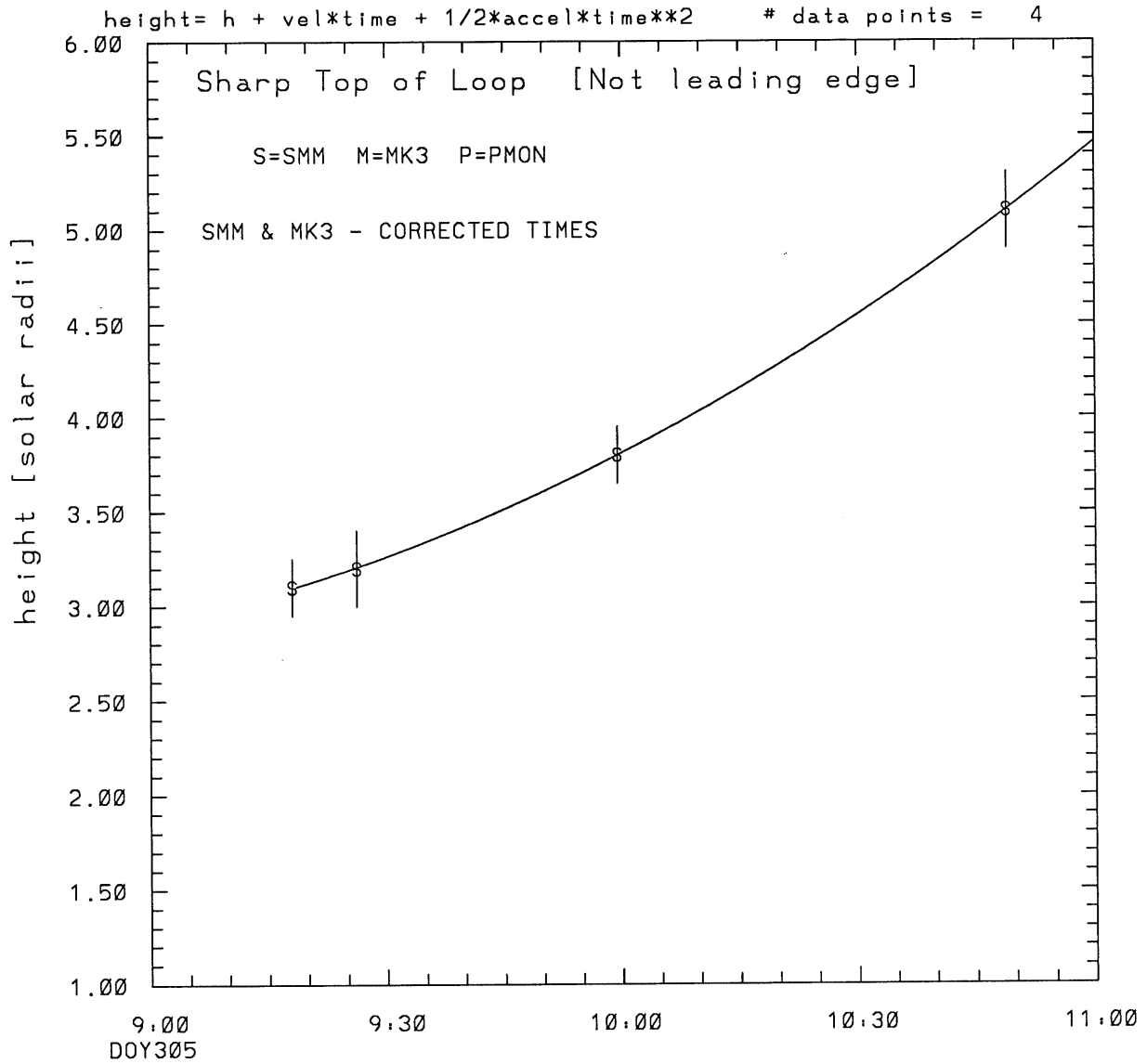


SMM C/P 1989 DOY305 245 +/- 0 degrees



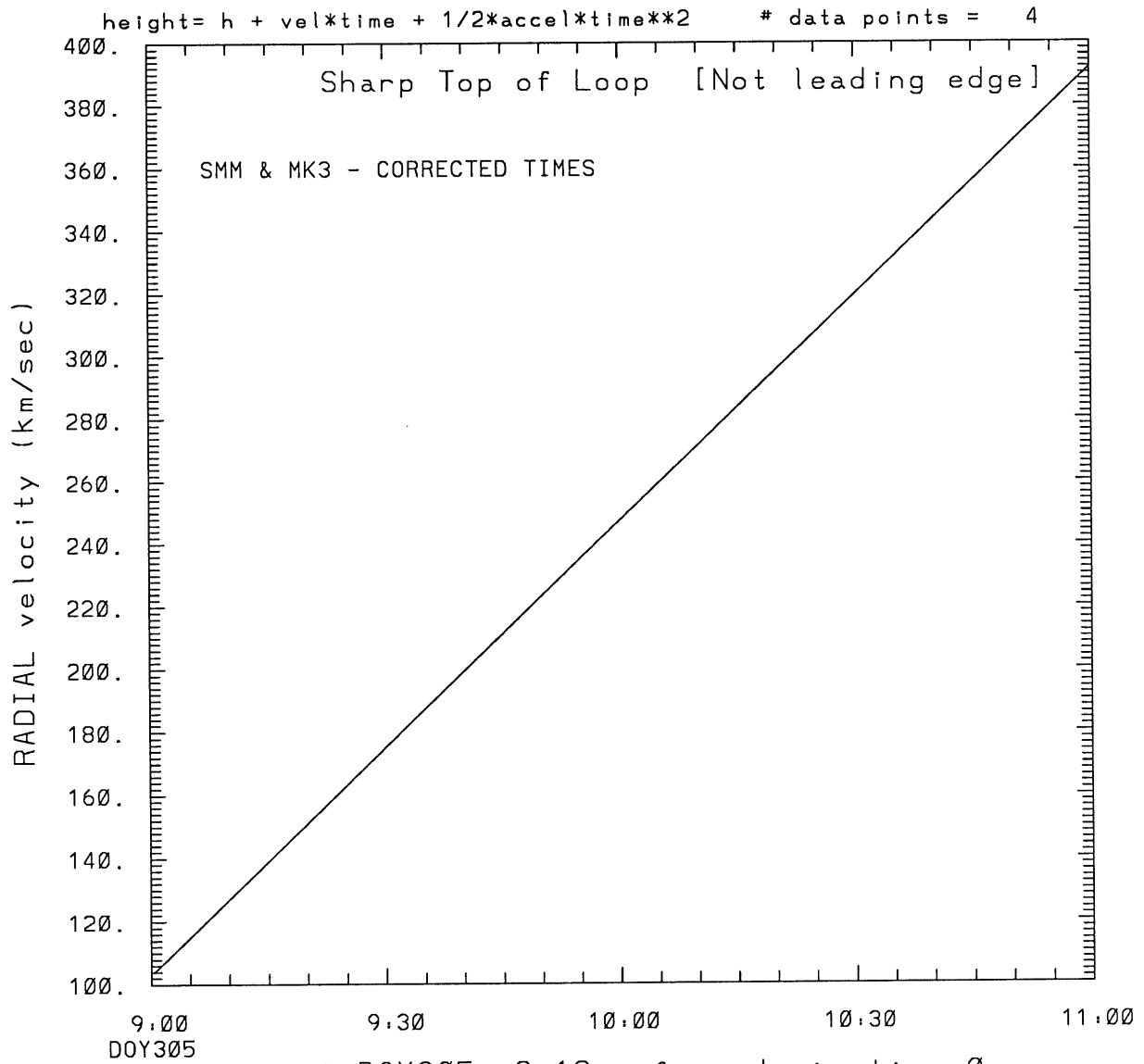
tstart=DOY305 7:46 +/- 3.0 [min.]
radial velocity= 251. +/- 19. [km/sec]

SMM C/P 1989 DOY305 245 +/- 0 degrees



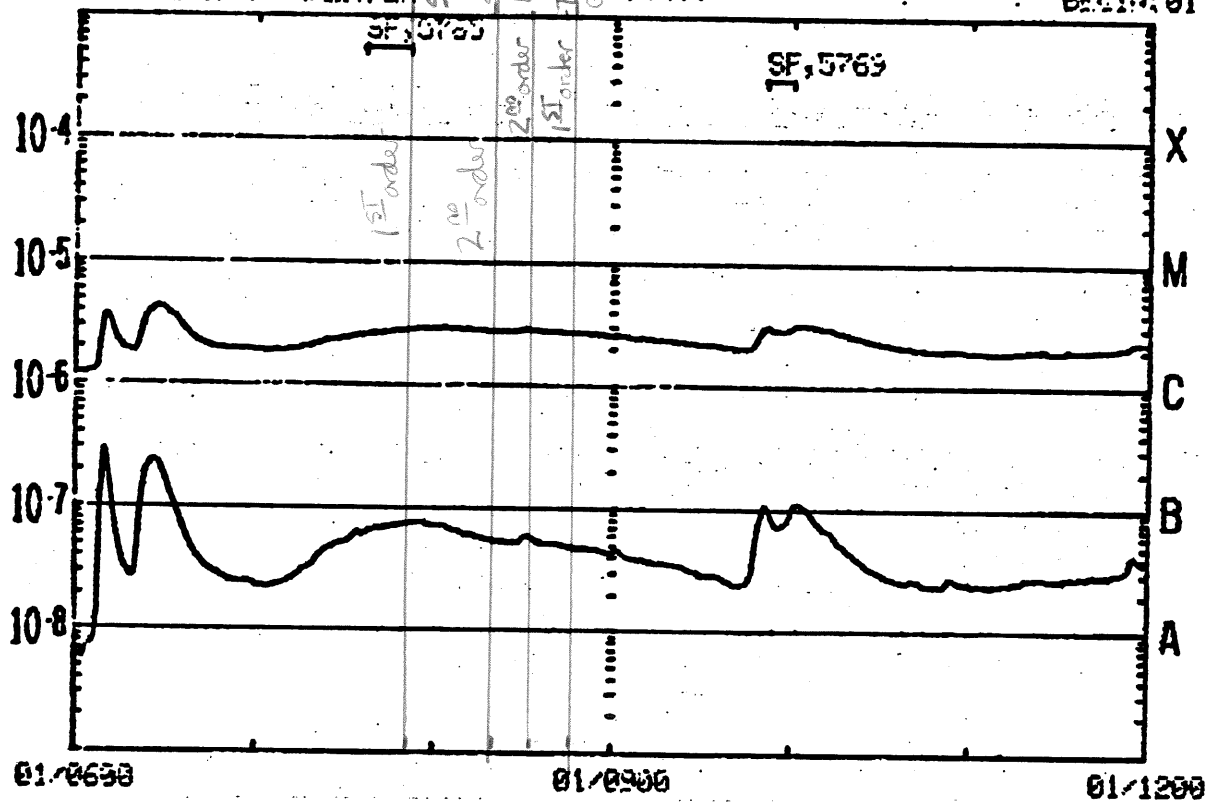
tstart=DOY305 8:18 from derivative=0
Event begins at 2.71 Solar Radii
radial acceleration = 0.0401 +/- 0.0011 [km/sec**2]

SMM C/P 1989 DOY305 245 +/- 0 degrees



DOY305 tstart=DOY305 8:18 from derivative=0
Event begins at 2.71 Solar Radii
radial acceleration=0.401E-01 km/sec**2

Watts meter c



Top of Sharp Front >
 NOT Leading Material
 [7149] 1st order
 center = 260°

1989

DOY

305
~~308~~

DOY AND OPTICAL DATA TOGETHER

BEGIN: 01 NOV 89

GOES 6 0.5-4.0A GOES 6 1.0-8.0A
 OPTICAL FLARES

SAA's
 NIGHT

GOES-6 1 MIN DATA: OPTICAL FLARE DUR. IMP. REGION

RUN: 2039UT
 6 NOV 89

This is a 1 order run

INPUT:

year	day	time	radii	radius	error in angle	error in angle	datatype
1989	305	9:17:59	3.10 +/-	0.15	245.0 +/-	1.0	SMM
1989	305	9:26:12	3.20 +/-	0.20	245.0 +/-	1.0	SMM
1989	305	9:59:29	3.80 +/-	0.15	245.0 +/-	1.0	SMM
1989	305	10:48:55	5.10 +/-	0.20	245.0 +/-	1.0	SMM

Structure being measured:
Sharp Top of Loop [Not leading edge]

OUTPUT:

START TIME:

Event began at $t = 0 + -0.757E+02 +/- 0.298E+01$ [minutes]
In more convenient units:
Event began at DOY 305 7:46 +/- 0.298E+01 [minutes]

Origin defined at DOY305 9: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 251. +/- 19. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.264E+01 +/- 0.968E-01 [solar radii]
c(2) = 0.216E-01 +/- 0.164E-02 [radii/min]
c(2) = 0.251E+03 +/- 0.190E+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)= 0.11309E+00 [radii] see Bevington pg. 114
error in c(2)= 0.17656E-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) = 245. +/- 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 RADIAL velocity at 9:17 = 251. km/sec

The RADIAL velocity at 9:26 = 251. km/sec

The RADIAL velocity at 9:59 = 251. km/sec

The RADIAL velocity at 10:48 = 251. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.92
Standard Deviation in start time measurement = 0.358E+02
Error in time = 0.82472E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.116E-01
Reduced Chi Squared = 0.480E-01
Chi Squared = 0.959E-01
The probability for exceeding chi square = 0.988E+00

The correlation coefficient = 0.994E+00
The probability that no LINEAR correlation exists between the variables = 0.59461
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	305	9:17:59	3.10 +/- 0.15	245.0 +/- 1.0	1.0	SMM	
1989	305	9:26:12	3.20 +/- 0.20	245.0 +/- 1.0	1.0	SMM	
1989	305	9:59:29	3.80 +/- 0.15	245.0 +/- 1.0	1.0	SMM	
1989	305	10:48:55	5.10 +/- 0.20	245.0 +/- 1.0	1.0	SMM	

Structure being measured:
Sharp Top of Loop [Not leading edge]

OUTPUT:

START TIME:

tstart=DOY305 8:18 from derivative = 0
Event begins at 2.71 Solar Radii
Origin defined at DOY305 9: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.401E-01 +/- 0.113E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.290E+01 +/- 0.884E-02 [solar radii]
c(2) = 0.888E-02 +/- 0.369E-03 [radii/min]
c(2) = 0.103E+03 +/- 0.428E+01 [km/sec]
c(3) = 0.104E-03 +/- 0.292E-05 [radii/min**2]
c(3) = 0.401E-01 +/- 0.113E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.15185E-01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.52565E-02 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.64014E-03 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.15875E-03 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.49218E-05 [radii/min**2] Bevington pg 154 (8-30)
Exact error in c(3) = 0.10493E-05 [radii/min**2] 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) = 245. +/- 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 RADIAL velocity at 9:17 = 146. km/sec

The RADIAL velocity at 9:26 = 166. km/sec

The RADIAL velocity at 9:59 = 246. km/sec

The RADIAL velocity at 10:48 = 365. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.92

Standard Deviation in start time measurement = 0.358E+02

Value of reduced Chi Squared returned from nllst2 = 0.276E-04

Reduced Chi Squared = 0.129E-03

Chi Squared = 0.129E-03

The probability for exceeding chi square = 0.996E+00

For a second order fit 3 correlation coefficients are given:

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

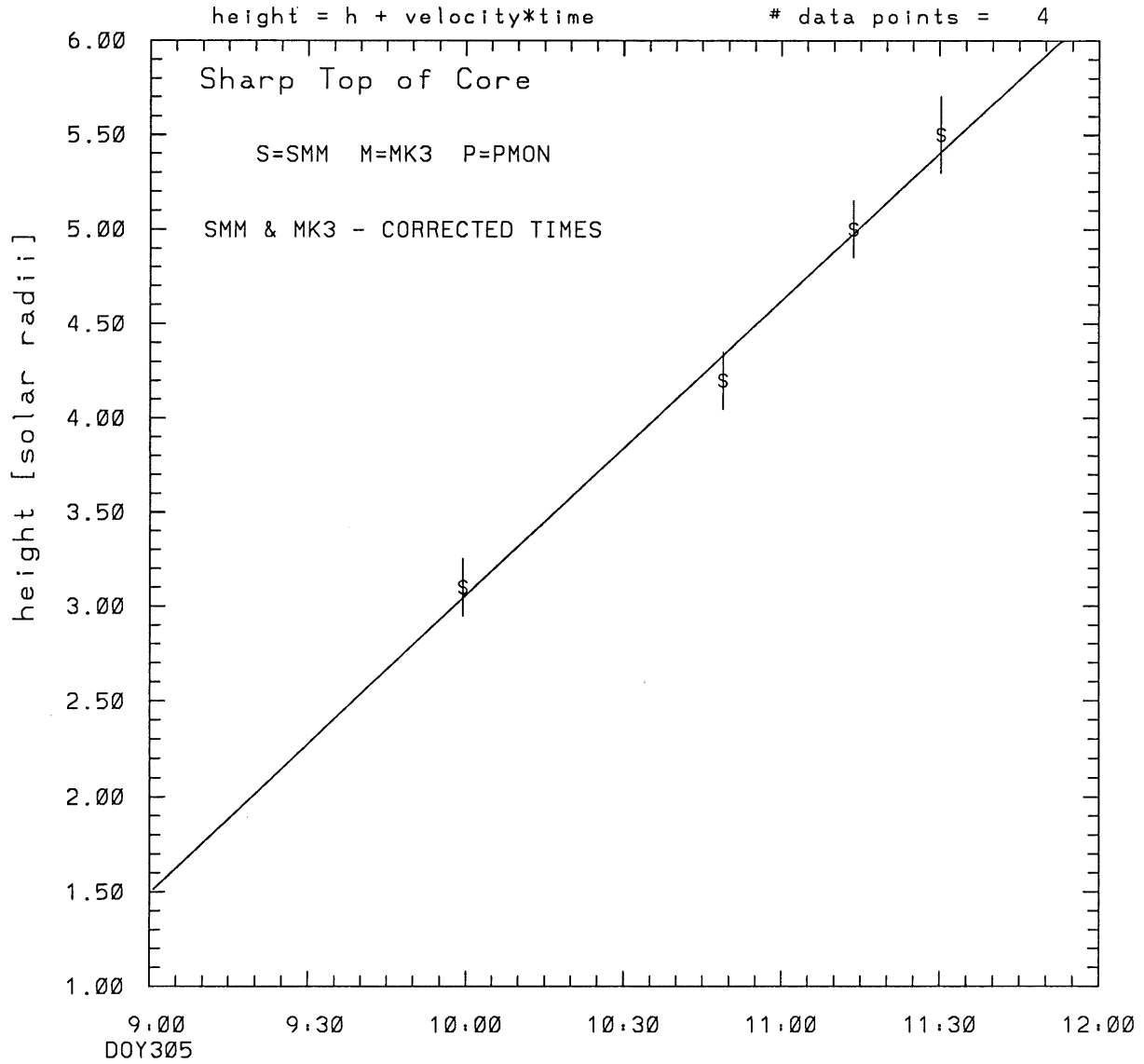
The correlation between the data and the term linear in time = 0.9195E+00

The correlation between the data and the time**2 term = 0.8990E+00

The correlation between the data and the complete equation of motion=0.1000E+01

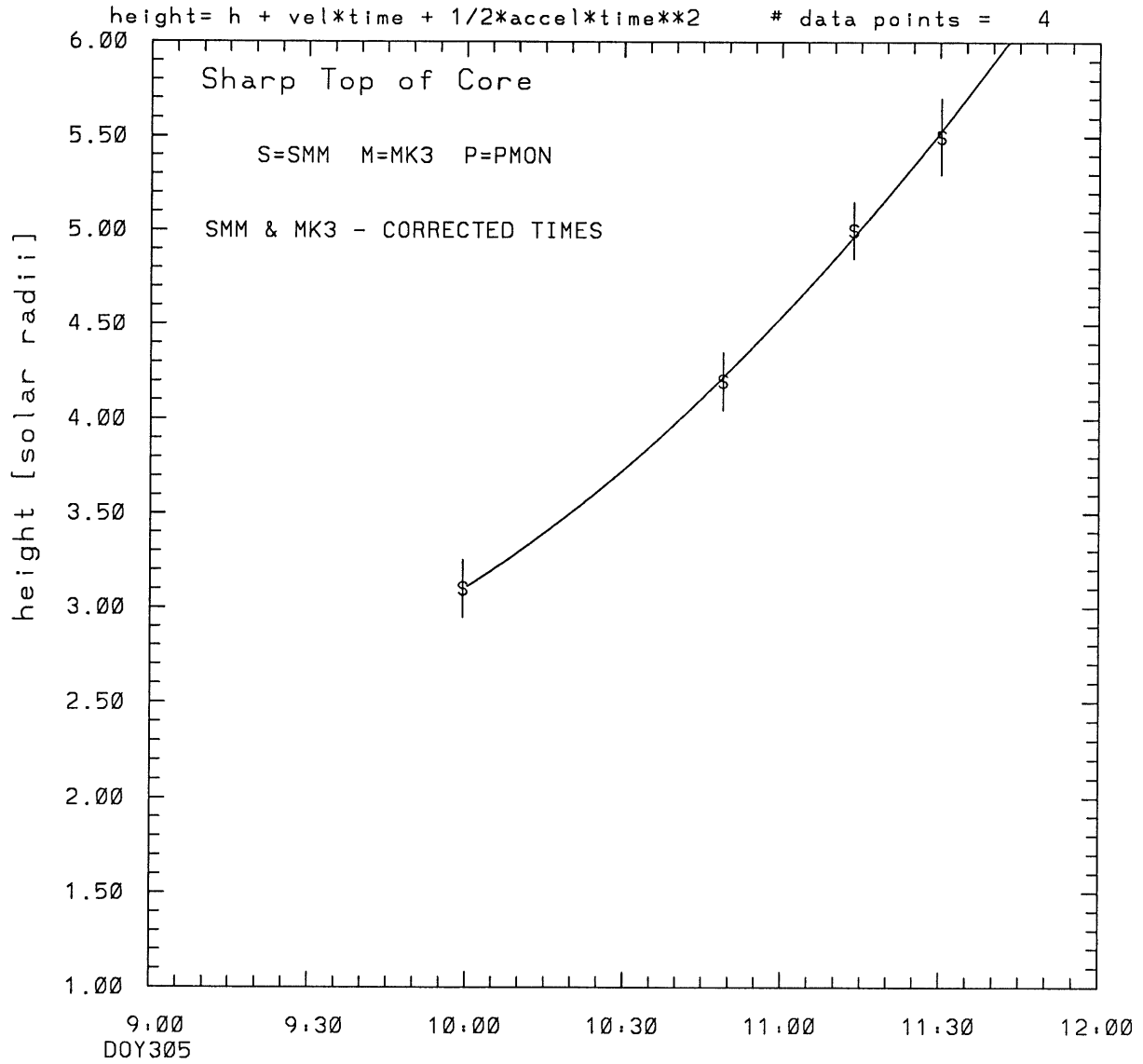
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

SMM C/P 1989 DOY305 257 +/- 0 degrees



tstart=DOY305 8:41 +/- 1.0 [min.]
radial velocity= 302. +/- 17. [km/sec]

SMM C/P 1989 DOY305 257 +/- 0 degrees

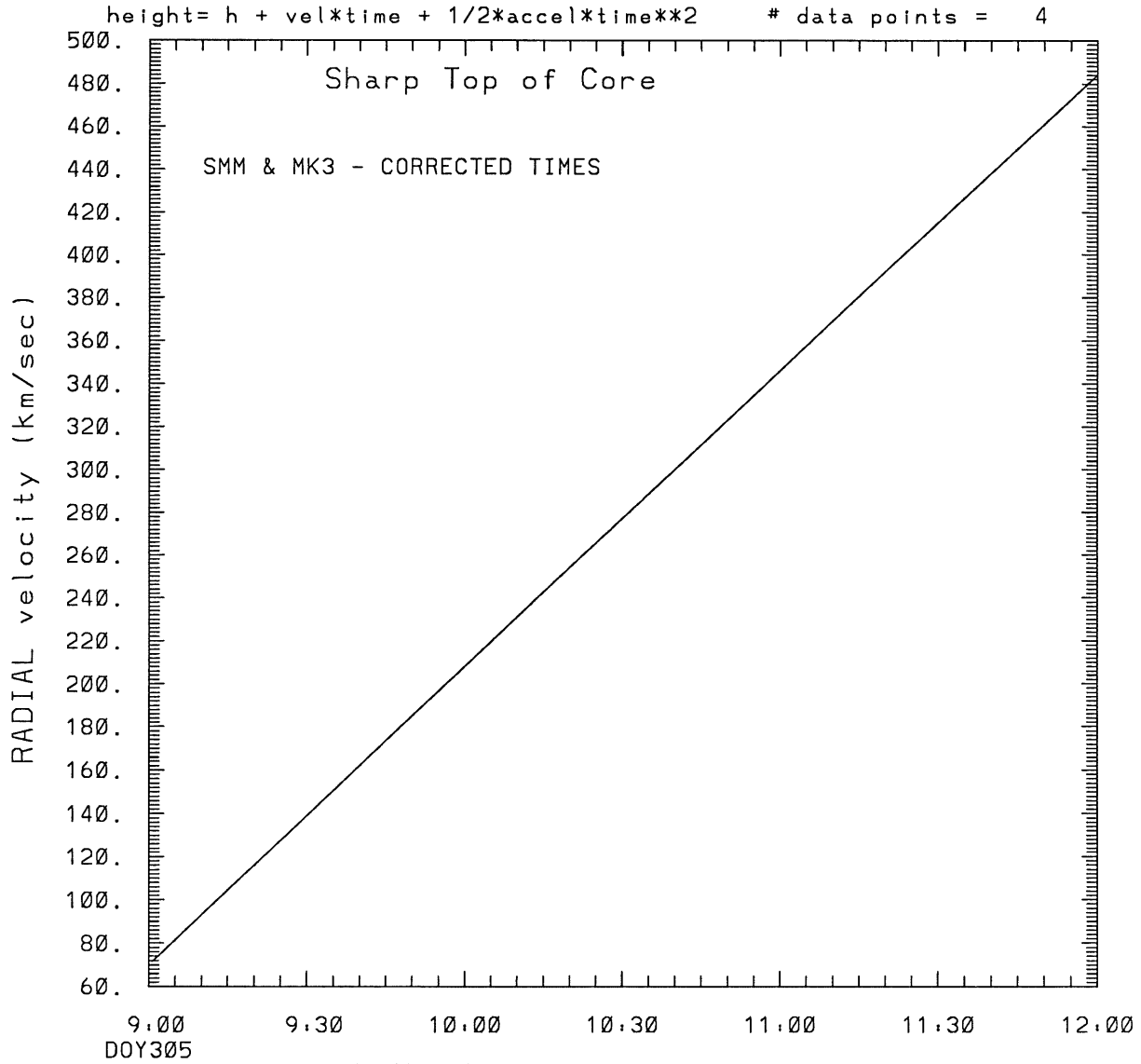


tstart=DOY305 8:30 from derivative=0

Event begins at 2.30 Solar Radii

radial acceleration = 0.0383 +/- 0.0081 [km/sec**2]

SMM C/P 1989 DOY305 257 +/- 0 degrees



tstart=DOY305 8:30 from derivative=0
Event begins at 2.30 Solar Radii
radial acceleration=0.383E-01 km/sec**2

This is a 1 order run

INPUT:

year	doy	time	radii	radius	error in angle	error in angle	datatype
1989	305	9:59:29	3.10 +/- 0.15	257.0 +/- 1.0			SMM
1989	305	10:48:55	4.20 +/- 0.15	257.0 +/- 1.0			SMM
1989	305	11:13:40	5.00 +/- 0.15	257.0 +/- 1.0			SMM
1989	305	11:30:11	5.50 +/- 0.20	257.0 +/- 1.0			SMM

Structure being measured:
Sharp Top of Core

OUTPUT:

START TIME:

Event began at t = 0 + -0.190E+02 +/- 0.985E+00 [minutes]
In more convenient units:
Event began at DOY 305 8:41 +/- 0.985E+00 [minutes]

Origin defined at DOY305 9: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 302. +/- 17. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.150E+01 +/- 0.167E+00 [solar radii]
c(2) = 0.260E-01 +/- 0.147E-02 [radii/min]
c(2) = 0.302E+03 +/- 0.170E+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)= 0.21039E+00 [radii] see Bevington pg. 114
error in c(2)= 0.17810E-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) = 257. +/- 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 RADIAL velocity at 9:59 = 302. km/sec

The RADIAL velocity at 10:48 = 302. km/sec

The RADIAL velocity at 11:13 = 302. km/sec

The RADIAL velocity at 11:30 = 302. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 1.05
Standard Deviation in start time measurement = 0.342E+02
Error in time = 0.66231E+01 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.971E-02
Reduced Chi Squared = 0.372E-01
Chi Squared = 0.744E-01
The probability for exceeding chi square = 0.990E+00

The correlation coefficient = 0.996E+00
The probability that no LINEAR correlation exists between the variables = 0.43951
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year	doy	time	radii	radius	angle	error in angle	error in angle	datatype
1989	305	9:59:29	3.10 +/-	0.15	257.0 +/-	1.0		SMM
1989	305	10:48:55	4.20 +/-	0.15	257.0 +/-	1.0		SMM
1989	305	11:13:40	5.00 +/-	0.15	257.0 +/-	1.0		SMM
1989	305	11:30:11	5.50 +/-	0.20	257.0 +/-	1.0		SMM

Structure being measured:
Sharp Top of Core

OUTPUT:

START TIME:

tstart=DOY305 8:30 from derivative = 0
Event begins at 2.30 Solar Radii
Origin defined at DOY305 9: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.383E-01 +/- 0.813E-02 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.239E+01 +/- 0.198E+00 [solar radii]
c(2) = 0.604E-02 +/- 0.427E-02 [radii/min]
c(2) = 0.700E+02 +/- 0.496E+02 [km/sec]
c(3) = 0.992E-04 +/- 0.210E-04 [radii/min**2]
c(3) = 0.383E-01 +/- 0.813E-02 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.28799E+00 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.10488E+00 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.60999E-02 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.25253E-02 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.29383E-04 [radii/min**2] Bevington pg 154 (8-30)
Exact error in c(3) = 0.12975E-04 [radii/min**2] 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) = 257. +/- 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 RADIAL velocity at 9:59 = 207. km/sec

The RADIAL velocity at 10:48 = 321. km/sec

The RADIAL velocity at 11:13 = 378. km/sec

The RADIAL velocity at 11:30 = 416. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 1.05

Standard Deviation in start time measurement = 0.342E+02

Value of reduced Chi Squared returned from nllst2 = 0.120E-02

Reduced Chi Squared = 0.806E-02

Chi Squared = 0.806E-02

The probability for exceeding chi square = 0.972E+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 = 0.9845E+00

The correlation between the data and the time² term = 0.9704E+00

The correlation between the data and the complete equation of motion=0.9998E+00

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