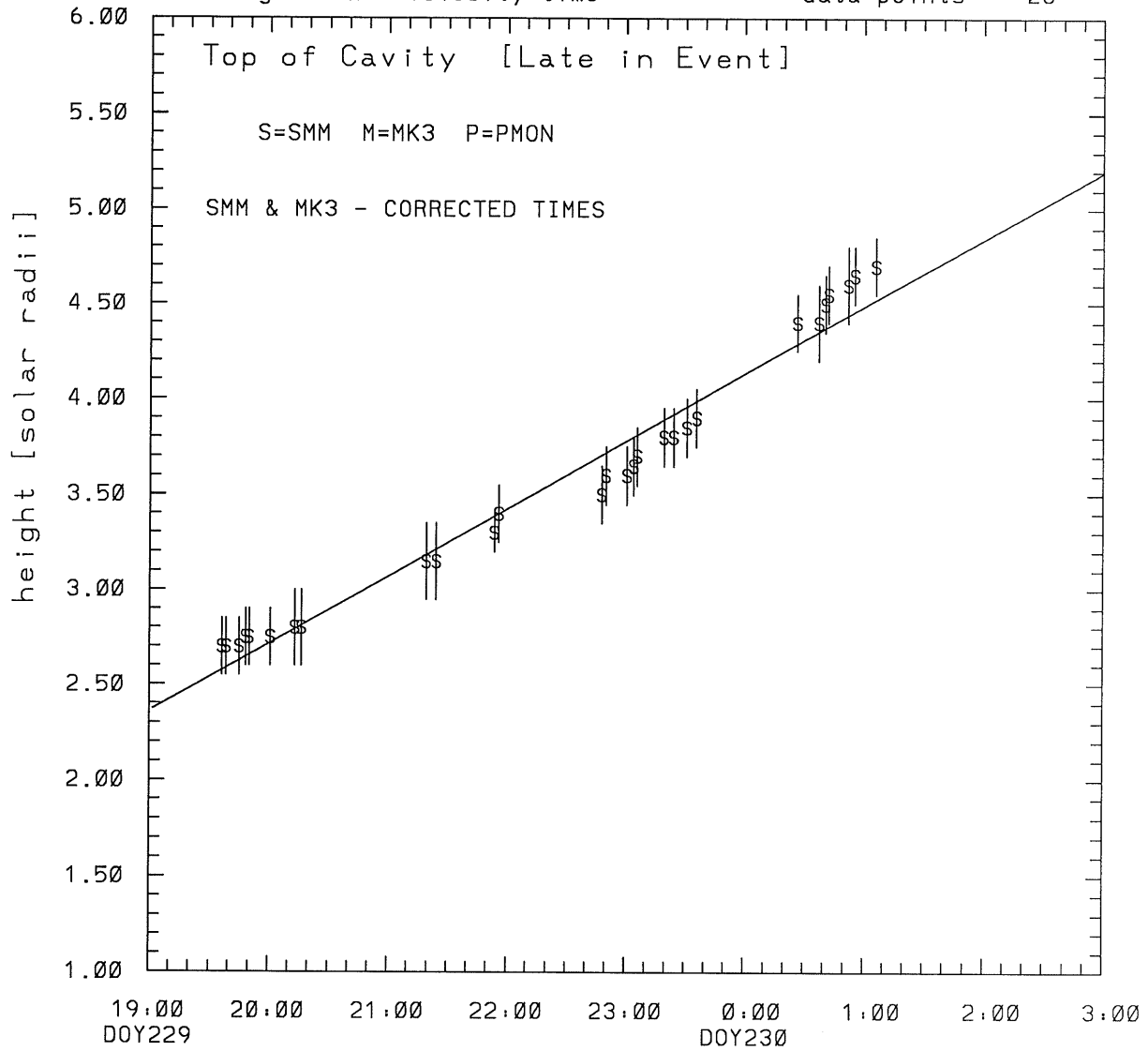


SMM C/P 1980 DOY229 60 +/- 0 degrees

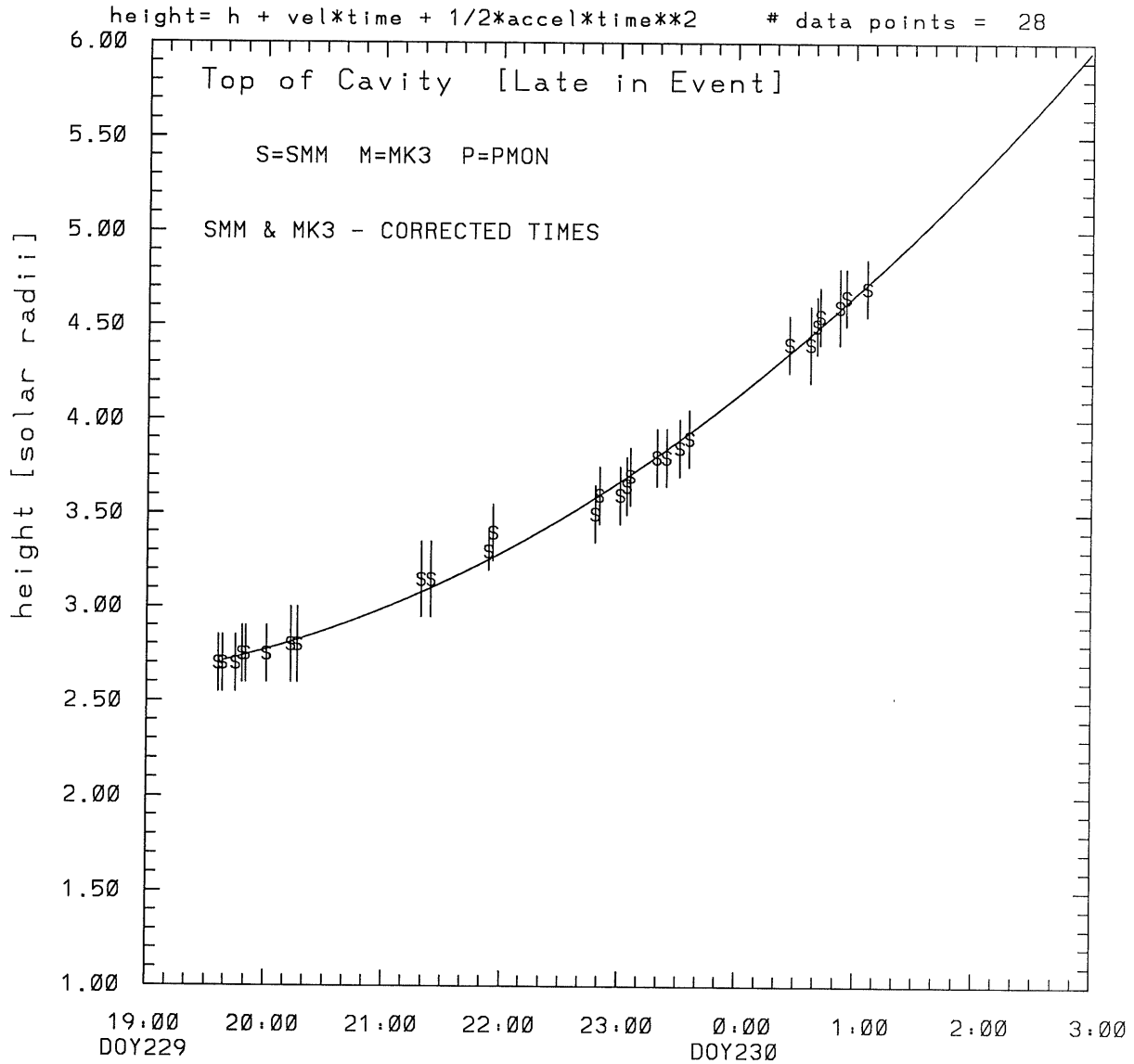
height = h + velocity*time

data points = 28



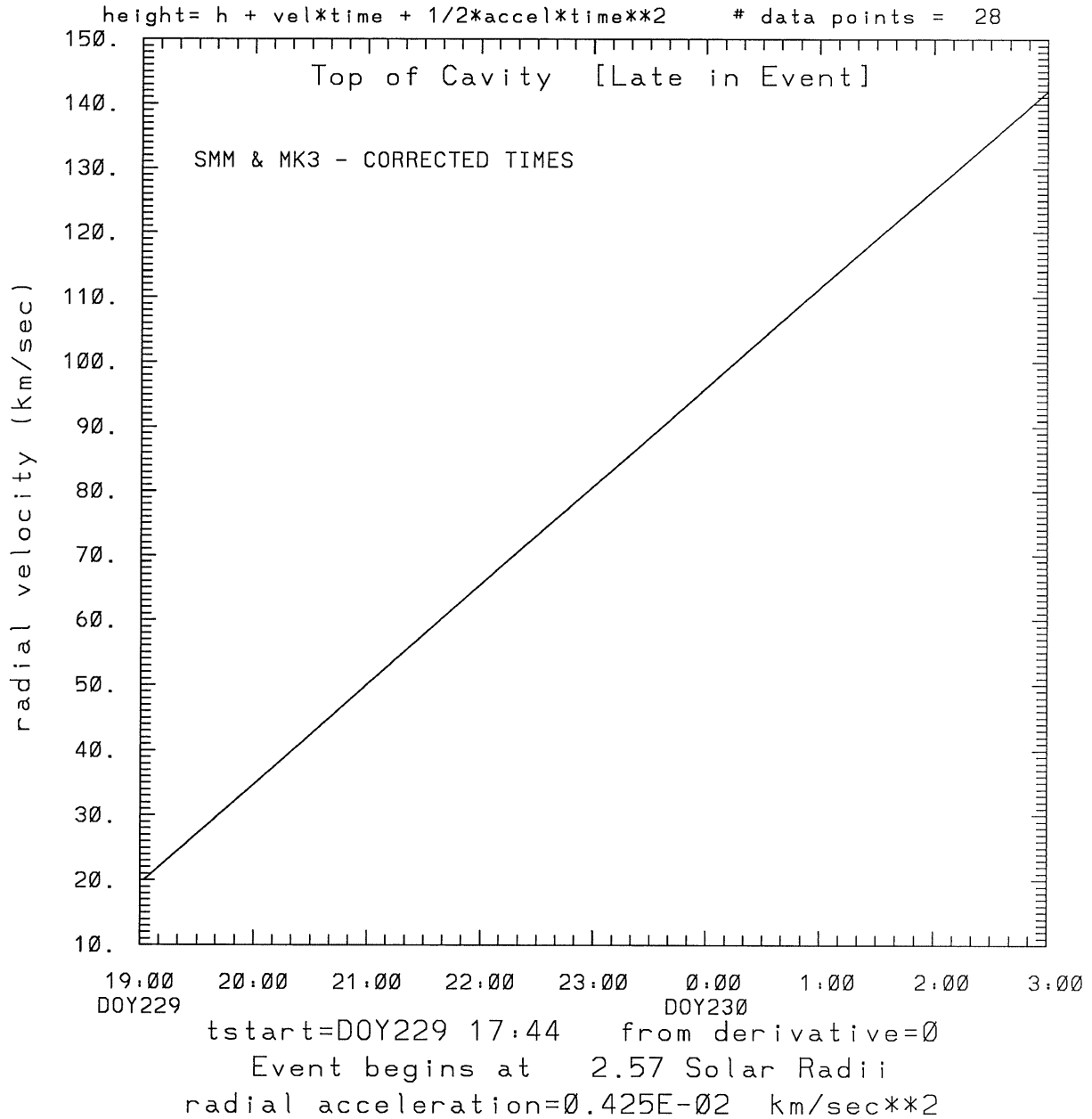
tstart=DOY229 15:10 +/- 0.5 [min.]
radial velocity= 69. +/- 2. [km/sec]

SMM C/P 1980 DOY229 60 +/- 0 degrees



tstart=DOY229 17:44 from derivative=0
Event begins at 2.57 Solar Radii
radial acceleration = 0.0043 +/- 0.0003 [km/sec**2]

SMM C/P 1980 DOY229 60 +/- 0 degrees



This is a 1 order run

INPUT:

year	doj	time	radii	error in radius	angle	error in angle	datatype
1980	229	19:36:27	2.70	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:38:40	2.70	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:45:15	2.70	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:48:25	2.75	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:50:12	2.75	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	20: 0:47	2.75	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	20:13:13	2.80	+/- 0.20	60.0	+/- 0.5	SMM
1980	229	20:16:29	2.80	+/- 0.20	60.0	+/- 0.5	SMM
1980	229	21:19:29	3.15	+/- 0.20	60.0	+/- 1.0	SMM
1980	229	21:24:23	3.15	+/- 0.20	60.0	+/- 1.0	SMM
1980	229	21:53:50	3.30	+/- 0.10	60.0	+/- 1.0	SMM
1980	229	21:56: 3	3.40	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	22:48: 1	3.50	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	22:50:14	3.60	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23: 0:50	3.60	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23: 4: 6	3.65	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23: 5:47	3.70	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:19:15	3.80	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:24:12	3.80	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:30:56	3.85	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:35:53	3.90	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:26:40	4.40	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:37:27	4.40	+/- 0.20	60.0	+/- 1.0	SMM
1980	230	0:40:42	4.50	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:42:24	4.55	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:52:17	4.60	+/- 0.20	60.0	+/- 1.0	SMM
1980	230	0:55:32	4.65	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	1: 6:12	4.70	+/- 0.15	60.0	+/- 1.0	SMM

Structure being measured:

Top of Cavity [Late in Event]

OUTPUT:

START TIME:

Event began at t = 0 + -0.230E+03 +/- 0.493E+00 [minutes]

In more convenient units:

Event began at DOY 229 15:10 +/- 0.493E+00 [minutes]

Origin defined at DOY229 19: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 69. +/- 2. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.236E+01 +/- 0.489E-01 [solar radii]
c(2) = 0.591E-02 +/- 0.210E-03 [radii/min]
c(2) = 0.685E+02 +/- 0.243E+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)= 0.47883E-01 [radii] see Bevington pg. 114
error in c(2)= 0.20456E-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) = 60. +/- 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 19:36 = 0.000E+00 km/sec

The TOTAL velocity at 19:36 = 69. km/sec

The TANGENTIAL velocity at 19:38 = 0.000E+00 km/sec

The TOTAL velocity at 19:38 = 69. km/sec

The TANGENTIAL velocity at 19:45 = 0.000E+00 km/sec

The TOTAL velocity at 19:45 = 69. km/sec

The TANGENTIAL velocity at 19:48 = 0.000E+00 km/sec

The TOTAL velocity at 19:48 = 69. km/sec

The TANGENTIAL velocity at 19:50 = 0.000E+00 km/sec

The TOTAL velocity at 19:50 = 69. km/sec

The TANGENTIAL velocity at 20: 0 = 0.000E+00 km/sec

The TOTAL velocity at 20: 0 = 69. km/sec

The TANGENTIAL velocity at 20:13 = 0.000E+00 km/sec

The TOTAL velocity at 20:13 = 69. km/sec

The TANGENTIAL velocity at 20:16 = 0.000E+00 km/sec
The TOTAL velocity at 20:16 = 69. km/sec

The TANGENTIAL velocity at 21:19 = 0.000E+00 km/sec
The TOTAL velocity at 21:19 = 69. km/sec

The TANGENTIAL velocity at 21:24 = 0.000E+00 km/sec
The TOTAL velocity at 21:24 = 69. km/sec

The TANGENTIAL velocity at 21:53 = 0.000E+00 km/sec
The TOTAL velocity at 21:53 = 69. km/sec

The TANGENTIAL velocity at 21:56 = 0.000E+00 km/sec
The TOTAL velocity at 21:56 = 69. km/sec

The TANGENTIAL velocity at 22:48 = 0.000E+00 km/sec
The TOTAL velocity at 22:48 = 69. km/sec

The TANGENTIAL velocity at 22:50 = 0.000E+00 km/sec
The TOTAL velocity at 22:50 = 69. km/sec

The TANGENTIAL velocity at 23: 0 = 0.000E+00 km/sec
The TOTAL velocity at 23: 0 = 69. km/sec

The TANGENTIAL velocity at 23: 4 = 0.000E+00 km/sec
The TOTAL velocity at 23: 4 = 69. km/sec

The TANGENTIAL velocity at 23: 5 = 0.000E+00 km/sec
The TOTAL velocity at 23: 5 = 69. km/sec

The TANGENTIAL velocity at 23:19 = 0.000E+00 km/sec
The TOTAL velocity at 23:19 = 69. km/sec

The TANGENTIAL velocity at 23:24 = 0.000E+00 km/sec
The TOTAL velocity at 23:24 = 69. km/sec

The TANGENTIAL velocity at 23:30 = 0.000E+00 km/sec
The TOTAL velocity at 23:30 = 69. km/sec

The TANGENTIAL velocity at 23:35 = 0.000E+00 km/sec
The TOTAL velocity at 23:35 = 69. km/sec

The TANGENTIAL velocity at 0:26 = 0.000E+00 km/sec
The TOTAL velocity at 0:26 = 69. km/sec

The TANGENTIAL velocity at 0:37 = 0.000E+00 km/sec
The TOTAL velocity at 0:37 = 69. km/sec

The TANGENTIAL velocity at 0:40 = 0.000E+00 km/sec
The TOTAL velocity at 0:40 = 69. km/sec

The TANGENTIAL velocity at 0:42 = 0.000E+00 km/sec
The TOTAL velocity at 0:42 = 69. km/sec

The TANGENTIAL velocity at 0:52 = 0.000E+00 km/sec
The TOTAL velocity at 0:52 = 69. km/sec

The TANGENTIAL velocity at 0:55 = 0.000E+00 km/sec
The TOTAL velocity at 0:55 = 69. km/sec

The TANGENTIAL velocity at 1: 6 = 0.000E+00 km/sec
The TOTAL velocity at 1: 6 = 69. 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 = 0.113E+03
Error in time = 0.10534E+03 using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.149E-01
Reduced Chi Squared = 0.265E+00
Chi Squared = 0.688E+01
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.985E+00
The probability that no LINEAR correlation exists between the variables = -0.5110E-07
SEE BEVINGTON "Data Reduction and Error Analysis" [1969]

This is a 2 order run

INPUT:

year	day	time	radii	error in radius	angle	error in angle	datatype
1980	229	19:36:27	2.70	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:38:40	2.70	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:45:15	2.70	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:48:25	2.75	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	19:50:12	2.75	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	20: 0:47	2.75	+/- 0.15	60.0	+/- 0.5	SMM
1980	229	20:13:13	2.80	+/- 0.20	60.0	+/- 0.5	SMM
1980	229	20:16:29	2.80	+/- 0.20	60.0	+/- 0.5	SMM
1980	229	21:19:29	3.15	+/- 0.20	60.0	+/- 1.0	SMM
1980	229	21:24:23	3.15	+/- 0.20	60.0	+/- 1.0	SMM
1980	229	21:53:50	3.30	+/- 0.10	60.0	+/- 1.0	SMM
1980	229	21:56: 3	3.40	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	22:48: 1	3.50	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	22:50:14	3.60	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23: 0:50	3.60	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23: 4: 6	3.65	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23: 5:47	3.70	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:19:15	3.80	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:24:12	3.80	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:30:56	3.85	+/- 0.15	60.0	+/- 1.0	SMM
1980	229	23:35:53	3.90	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:26:40	4.40	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:37:27	4.40	+/- 0.20	60.0	+/- 1.0	SMM
1980	230	0:40:42	4.50	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:42:24	4.55	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	0:52:17	4.60	+/- 0.20	60.0	+/- 1.0	SMM
1980	230	0:55:32	4.65	+/- 0.15	60.0	+/- 1.0	SMM
1980	230	1: 6:12	4.70	+/- 0.15	60.0	+/- 1.0	SMM

Structure being measured:
Top of Cavity [Late in Event]

OUTPUT:

START TIME:

tstart=DOY229 17:44 from derivative = 0
Event begins at 2.57 Solar Radii
Origin defined at DOY229 19: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = $0.425E-02 \pm 0.347E-03$ km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = $0.263E+01 \pm 0.293E-01$ [solar radii]
c(2) = $0.168E-02 \pm 0.355E-03$ [radii/min]
c(2) = $0.195E+02 \pm 0.412E+01$ [km/sec]
c(3) = $0.110E-04 \pm 0.898E-06$ [radii/min**2]
c(3) = $0.425E-02 \pm 0.347E-03$ [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = $0.29945E-01$ [radii] Bevington pg 154 (8-30)
Exact error in c(1) = $0.12238E-02$ [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = $0.37094E-03$ [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = $0.14920E-04$ [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = $0.93270E-06$ [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = $0.47012E-07$ [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

ANGULAR ACCELERATION= $0.0000E+00 \pm 0.0000E+00$ [radians/sec**2]

The computed ANGULAR coefficients and errors FROM NLLST2 are:

a(1) = $60. \pm 0.$ [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 19:36 = $0.000E+00$ km/sec

The TOTAL velocity at 19:36 = 29. km/sec

The TANGENTIAL velocity at 19:38 = $0.000E+00$ km/sec

The TOTAL velocity at 19:38 = 29. km/sec

The TANGENTIAL velocity at 19:45 = $0.000E+00$ km/sec

The TOTAL velocity at 19:45 = 31. km/sec

The TANGENTIAL velocity at 19:48 = $0.000E+00$ km/sec

The TOTAL velocity at 19:48 = 32. km/sec

The TANGENTIAL velocity at 19:50 = $0.000E+00$ km/sec

The TOTAL velocity at 19:50 = 32. km/sec

The TANGENTIAL velocity at 20: 0 = $0.000E+00$ km/sec

The TOTAL velocity at 20: 0 = 35. km/sec

The TANGENTIAL velocity at 20:13 = 0.000E+00 km/sec

The TOTAL velocity at 20:13 = 38. km/sec

The TANGENTIAL velocity at 20:16 = 0.000E+00 km/sec

The TOTAL velocity at 20:16 = 39. km/sec

The TANGENTIAL velocity at 21:19 = 0.000E+00 km/sec

The TOTAL velocity at 21:19 = 55. km/sec

The TANGENTIAL velocity at 21:24 = 0.000E+00 km/sec

The TOTAL velocity at 21:24 = 56. km/sec

The TANGENTIAL velocity at 21:53 = 0.000E+00 km/sec

The TOTAL velocity at 21:53 = 64. km/sec

The TANGENTIAL velocity at 21:56 = 0.000E+00 km/sec

The TOTAL velocity at 21:56 = 64. km/sec

The TANGENTIAL velocity at 22:48 = 0.000E+00 km/sec

The TOTAL velocity at 22:48 = 78. km/sec

The TANGENTIAL velocity at 22:50 = 0.000E+00 km/sec

The TOTAL velocity at 22:50 = 78. km/sec

The TANGENTIAL velocity at 23: 0 = 0.000E+00 km/sec

The TOTAL velocity at 23: 0 = 81. km/sec

The TANGENTIAL velocity at 23: 4 = 0.000E+00 km/sec

The TOTAL velocity at 23: 4 = 82. km/sec

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

The TOTAL velocity at 23: 5 = 82. km/sec

The TANGENTIAL velocity at 23:19 = 0.000E+00 km/sec

The TOTAL velocity at 23:19 = 86. km/sec

The TANGENTIAL velocity at 23:24 = 0.000E+00 km/sec

The TOTAL velocity at 23:24 = 87. km/sec

The TANGENTIAL velocity at 23:30 = 0.000E+00 km/sec

The TOTAL velocity at 23:30 = 89. km/sec

The TANGENTIAL velocity at 23:35 = 0.000E+00 km/sec

The TOTAL velocity at 23:35 = 90. km/sec

The TANGENTIAL velocity at 0:26 = 0.000E+00 km/sec

The TOTAL velocity at 0:26 = 103. km/sec

The TANGENTIAL velocity at 0:37 = 0.000E+00 km/sec

The TOTAL velocity at 0:37 = 106. km/sec

The TANGENTIAL velocity at 0:40 = 0.000E+00 km/sec

The TOTAL velocity at 0:40 = 106. km/sec

The TANGENTIAL velocity at 0:42 = 0.000E+00 km/sec
The TOTAL velocity at 0:42 = 107. km/sec

The TANGENTIAL velocity at 0:52 = 0.000E+00 km/sec
The TOTAL velocity at 0:52 = 109. km/sec

The TANGENTIAL velocity at 0:55 = 0.000E+00 km/sec
The TOTAL velocity at 0:55 = 110. km/sec

The TANGENTIAL velocity at 1: 6 = 0.000E+00 km/sec
The TOTAL velocity at 1: 6 = 113. 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 = 0.113E+03
Value of reduced Chi Squared returned from nllst2 = 0.229E-02
Reduced Chi Squared = 0.340E-01
Chi Squared = 0.851E+00
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 = 0.9587E+00

The correlation between the data and the time**2 term = 0.9645E+00

The correlation between the data and the complete equation of motion = 0.9951E+00

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