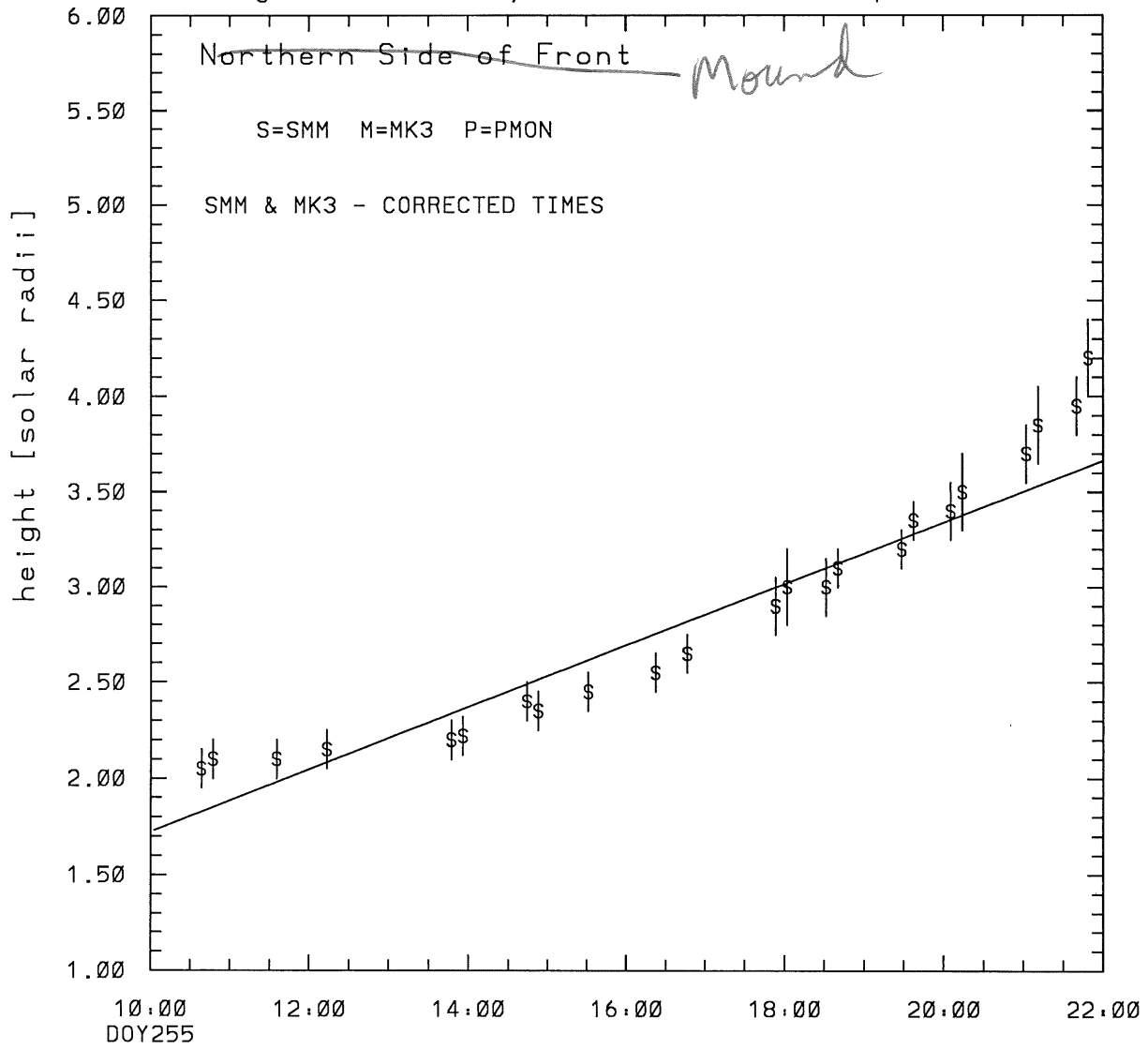


SMM C/P 1984 DOY255 313 +/- 0 degrees

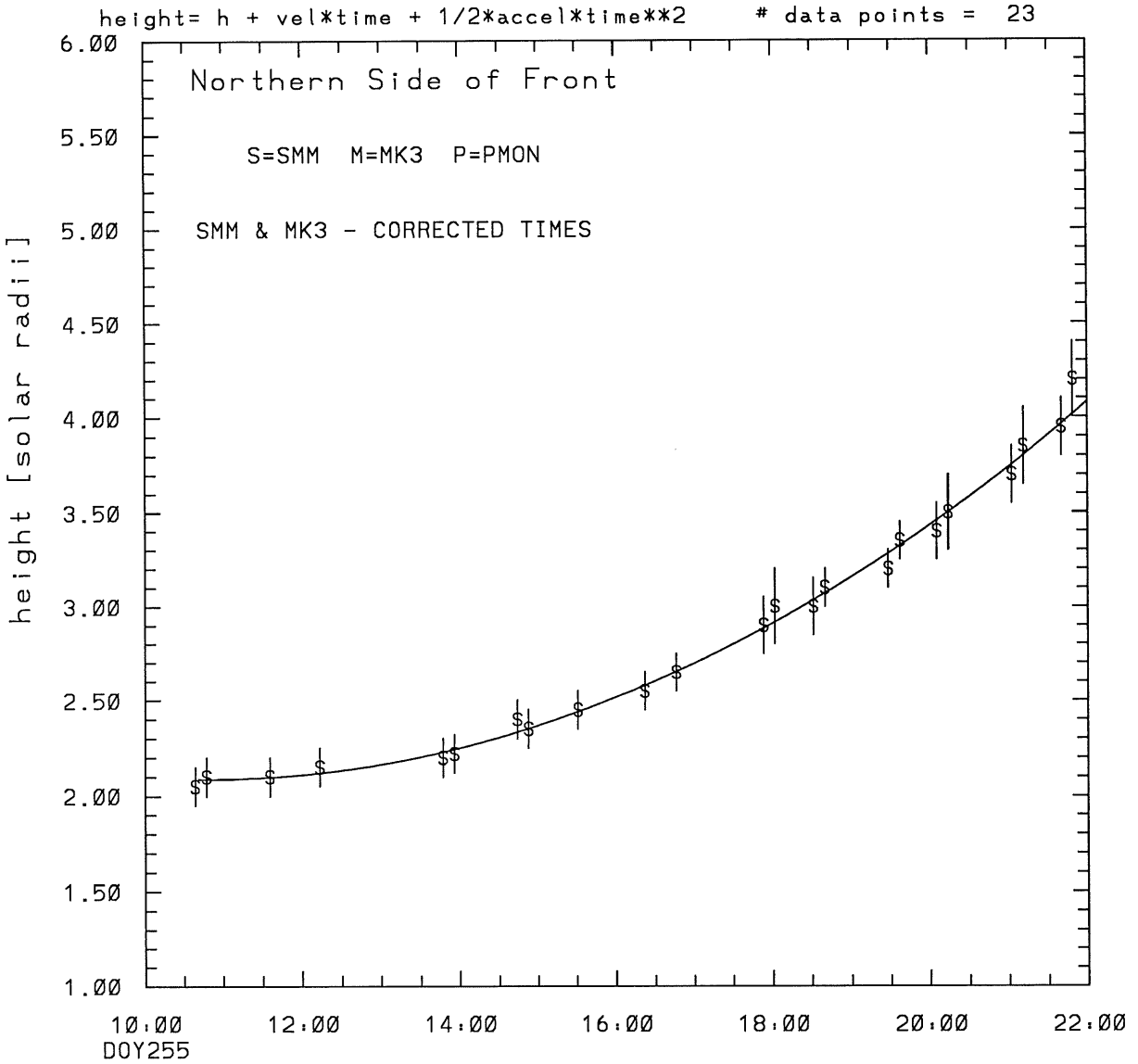
height = h + velocity*time

data points = 23



tstart=DOY255 5.32 +/- 3.2 [min.]
radial velocity= 31. +/- 2. [km/sec]

SMM C/P 1984 DOY255 313 +/- 0 degrees

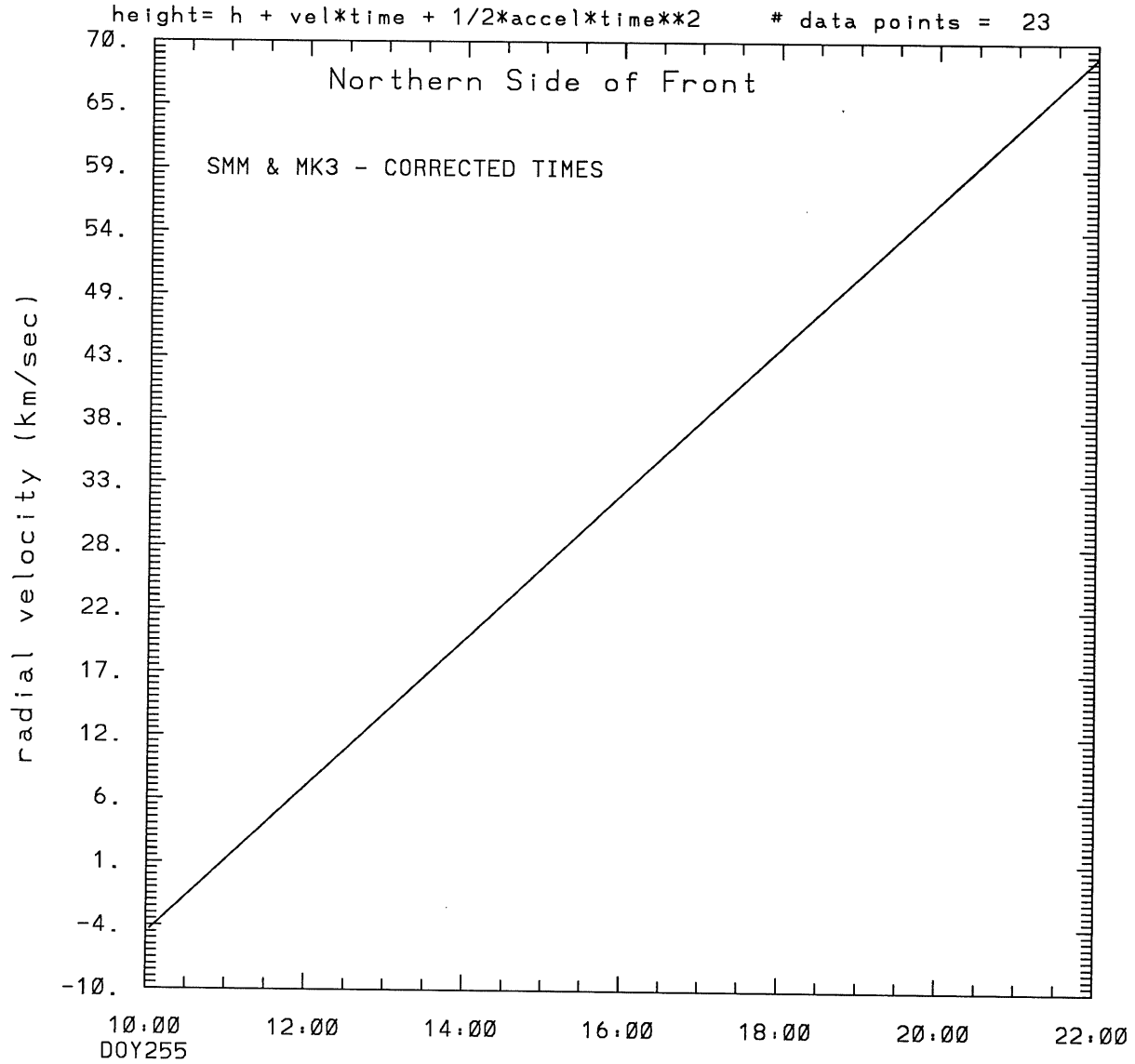


tstart=DOY255 10:48 from derivative=0

Event begins at 2.09 Solar Radii

radial acceleration = 0.0017 ± 0.0001 [km/sec**2]

SMM C/P 1984 DOY255 313 +/- 0 degrees



tstart=DOY255 10:48 from derivative=0
Event begins at 2.09 Solar Radii
radial acceleration=0.171E-02 km/sec**2

This is a 1 order run

INPUT:

year	day	time	radii	error in radius	angle	error in angle	datatype
1984	255	10:38:17	2.05	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	10:47: 2	2.10	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	11:35:17	2.10	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	12:13:17	2.15	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	13:47:17	2.20	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	13:56: 1	2.22	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	14:44:17	2.40	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	14:53: 1	2.35	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	15:31: 2	2.45	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	16:22:17	2.55	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	16:46:30	2.65	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	17:53:17	2.90	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	18: 2: 1	3.00	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	18:31:17	3.00	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	18:40: 2	3.10	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	19:28:18	3.20	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	19:37: 2	3.35	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	20: 5:18	3.40	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	20:14: 2	3.50	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	21: 2:17	3.70	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	21:11: 1	3.85	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	21:49: 1	4.20	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	21:40:17	3.95	+/- 0.15	313.0	+/- 1.0	SMM

Structure being measured:
~~Northern Side of Front~~ *Mound*

OUTPUT:

START TIME:

Event began at $t = 0 + -0.268E+03 +/- 0.317E+01$ [minutes]
In more convenient units:
Event began at DOY 255 5:32 +/- 0.317E+01 [minutes]

Origin defined at DOY255 10: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 31. +/- 2. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.172E+01 +/- 0.732E-01 [solar radii]
c(2) = 0.269E-02 +/- 0.180E-03 [radii/min]
c(2) = 0.313E+02 +/- 0.209E+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)= 0.96887E-01 [radii] see Bevington pg. 114

error in c(2)= 0.20790E-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) = 313. +/- 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 10:38 = 0.000E+00 km/sec

The TOTAL velocity at 10:38 = 31. km/sec

The TANGENTIAL velocity at 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 31. km/sec

The TANGENTIAL velocity at 11:35 = 0.000E+00 km/sec

The TOTAL velocity at 11:35 = 31. km/sec

The TANGENTIAL velocity at 12:13 = 0.000E+00 km/sec

The TOTAL velocity at 12:13 = 31. km/sec

The TANGENTIAL velocity at 13:47 = 0.000E+00 km/sec

The TOTAL velocity at 13:47 = 31. km/sec

The TANGENTIAL velocity at 13:56 = 0.000E+00 km/sec

The TOTAL velocity at 13:56 = 31. km/sec

The TANGENTIAL velocity at 14:44 = 0.000E+00 km/sec

The TOTAL velocity at 14:44 = 31. km/sec

The TANGENTIAL velocity at 14:53 = 0.000E+00 km/sec

The TOTAL velocity at 14:53 = 31. km/sec

The TANGENTIAL velocity at 15:31 = 0.000E+00 km/sec

The TOTAL velocity at 15:31 = 31. km/sec

The TANGENTIAL velocity at 16:22 = 0.000E+00 km/sec
The TOTAL velocity at 16:22 = 31. km/sec

The TANGENTIAL velocity at 16:46 = 0.000E+00 km/sec
The TOTAL velocity at 16:46 = 31. km/sec

The TANGENTIAL velocity at 17:53 = 0.000E+00 km/sec
The TOTAL velocity at 17:53 = 31. km/sec

The TANGENTIAL velocity at 18: 2 = 0.000E+00 km/sec
The TOTAL velocity at 18: 2 = 31. km/sec

The TANGENTIAL velocity at 18:31 = 0.000E+00 km/sec
The TOTAL velocity at 18:31 = 31. km/sec

The TANGENTIAL velocity at 18:40 = 0.000E+00 km/sec
The TOTAL velocity at 18:40 = 31. km/sec

The TANGENTIAL velocity at 19:28 = 0.000E+00 km/sec
The TOTAL velocity at 19:28 = 31. km/sec

The TANGENTIAL velocity at 19:37 = 0.000E+00 km/sec
The TOTAL velocity at 19:37 = 31. km/sec

The TANGENTIAL velocity at 20: 5 = 0.000E+00 km/sec
The TOTAL velocity at 20: 5 = 31. km/sec

The TANGENTIAL velocity at 20:14 = 0.000E+00 km/sec
The TOTAL velocity at 20:14 = 31. km/sec

The TANGENTIAL velocity at 21: 2 = 0.000E+00 km/sec
The TOTAL velocity at 21: 2 = 31. km/sec

The TANGENTIAL velocity at 21:11 = 0.000E+00 km/sec
The TOTAL velocity at 21:11 = 31. km/sec

The TANGENTIAL velocity at 21:49 = 0.000E+00 km/sec
The TOTAL velocity at 21:49 = 31. km/sec

The TANGENTIAL velocity at 21:40 = 0.000E+00 km/sec
The TOTAL velocity at 21:40 = 31. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.67

Standard Deviation in start time measurement = 0.210E+03

Error in time = $0.35612E+03$ using best fit method
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = $0.301E-01$

Reduced Chi Squared = $0.713E+00$

Chi Squared = $0.150E+02$

The probability for exceeding chi square = $0.100E+01$

The correlation coefficient = $0.958E+00$

The probability that no LINEAR correlation exists between the variables = $0.8721E-10$

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

This is a 2 order run

INPUT:

year	doy	time	radii	error in radius	angle	error in angle	datatype
1984	255	10:38:17	2.05	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	10:47: 2	2.10	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	11:35:17	2.10	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	12:13:17	2.15	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	13:47:17	2.20	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	13:56: 1	2.22	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	14:44:17	2.40	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	14:53: 1	2.35	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	15:31: 2	2.45	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	16:22:17	2.55	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	16:46:30	2.65	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	17:53:17	2.90	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	18: 2: 1	3.00	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	18:31:17	3.00	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	18:40: 2	3.10	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	19:28:18	3.20	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	19:37: 2	3.35	+/- 0.10	313.0	+/- 1.0	SMM
1984	255	20: 5:18	3.40	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	20:14: 2	3.50	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	21: 2:17	3.70	+/- 0.15	313.0	+/- 1.0	SMM
1984	255	21:11: 1	3.85	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	21:49: 1	4.20	+/- 0.20	313.0	+/- 1.0	SMM
1984	255	21:40:17	3.95	+/- 0.15	313.0	+/- 1.0	SMM

Structure being measured:

Northern Side of Front

OUTPUT:

START TIME:

tstart=DOY255 10:48 from derivative = 0

Event begins at 2.09 Solar Radii

Origin defined at DOY255 10: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.171E-02 +/- 0.977E-04 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.210E+01 +/- 0.286E-01 [solar radii]
c(2) = -0.428E-03 +/- 0.185E-03 [radii/min]
c(2) = -0.497E+01 +/- 0.214E+01 [km/sec]
c(3) = 0.442E-05 +/- 0.253E-06 [radii/min**2]
c(3) = 0.171E-02 +/- 0.977E-04 [km/sec**2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in c(1) = 0.41291E-01 [radii] Bevington pg 154 (8-30)
Exact error in c(1) = 0.12658E-02 [radii] Bevington pg 154 (8-28)
Approximate error in c(2) = 0.24575E-03 [radii/min] Bevington pg 154 (8-30)
Exact error in c(2) = 0.66460E-05 [radii/min] Bevington pg 154 (8-28)
Approximate error in c(3) = 0.31400E-06 [radii/min**] Bevington pg 154 (8-30)
Exact error in c(3) = 0.75948E-08 [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) = 313. +/- 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 10:38 = 0.000E+00 km/sec

The TOTAL velocity at 10:38 = -1. km/sec

The TANGENTIAL velocity at 10:47 = 0.000E+00 km/sec

The TOTAL velocity at 10:47 = 0. km/sec

The TANGENTIAL velocity at 11:35 = 0.000E+00 km/sec

The TOTAL velocity at 11:35 = 5. km/sec

The TANGENTIAL velocity at 12:13 = 0.000E+00 km/sec

The TOTAL velocity at 12:13 = 9. km/sec

The TANGENTIAL velocity at 13:47 = 0.000E+00 km/sec

The TOTAL velocity at 13:47 = 18. km/sec

The TANGENTIAL velocity at 13:56 = 0.000E+00 km/sec

The TOTAL velocity at 13:56 = 19. km/sec

The TANGENTIAL velocity at 14:44 = 0.000E+00 km/sec

The TOTAL velocity at 14:44 = 24. km/sec

The TANGENTIAL velocity at 14:53 = 0.000E+00 km/sec

The TOTAL velocity at 14:53 = 25. km/sec

The TANGENTIAL velocity at 15:31 = 0.000E+00 km/sec
The TOTAL velocity at 15:31 = 29. km/sec

The TANGENTIAL velocity at 16:22 = 0.000E+00 km/sec
The TOTAL velocity at 16:22 = 34. km/sec

The TANGENTIAL velocity at 16:46 = 0.000E+00 km/sec
The TOTAL velocity at 16:46 = 37. km/sec

The TANGENTIAL velocity at 17:53 = 0.000E+00 km/sec
The TOTAL velocity at 17:53 = 44. km/sec

The TANGENTIAL velocity at 18: 2 = 0.000E+00 km/sec
The TOTAL velocity at 18: 2 = 44. km/sec

The TANGENTIAL velocity at 18:31 = 0.000E+00 km/sec
The TOTAL velocity at 18:31 = 47. km/sec

The TANGENTIAL velocity at 18:40 = 0.000E+00 km/sec
The TOTAL velocity at 18:40 = 48. km/sec

The TANGENTIAL velocity at 19:28 = 0.000E+00 km/sec
The TOTAL velocity at 19:28 = 53. km/sec

The TANGENTIAL velocity at 19:37 = 0.000E+00 km/sec
The TOTAL velocity at 19:37 = 54. km/sec

The TANGENTIAL velocity at 20: 5 = 0.000E+00 km/sec
The TOTAL velocity at 20: 5 = 57. km/sec

The TANGENTIAL velocity at 20:14 = 0.000E+00 km/sec
The TOTAL velocity at 20:14 = 58. km/sec

The TANGENTIAL velocity at 21: 2 = 0.000E+00 km/sec
The TOTAL velocity at 21: 2 = 63. km/sec

The TANGENTIAL velocity at 21:11 = 0.000E+00 km/sec
The TOTAL velocity at 21:11 = 64. km/sec

The TANGENTIAL velocity at 21:49 = 0.000E+00 km/sec
The TOTAL velocity at 21:49 = 68. km/sec

The TANGENTIAL velocity at 21:40 = 0.000E+00 km/sec
The TOTAL velocity at 21:40 = 67. km/sec

The following info is for estimating goodness of the fit

Fit is ok [ier=1]

Standard Deviation in the height = 0.67
Standard Deviation in start time measurement = 0.210E+03
Value of reduced Chi Squared returned from nllst2 = 0.203E-02
Reduced Chi Squared = 0.609E-01
Chi Squared = 0.122E+01
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 = 0.9600E+00

The correlation between the data and the time**2 term = 0.9447E+00

The correlation between the data and the complete equation of motion = 0.9909E+00

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