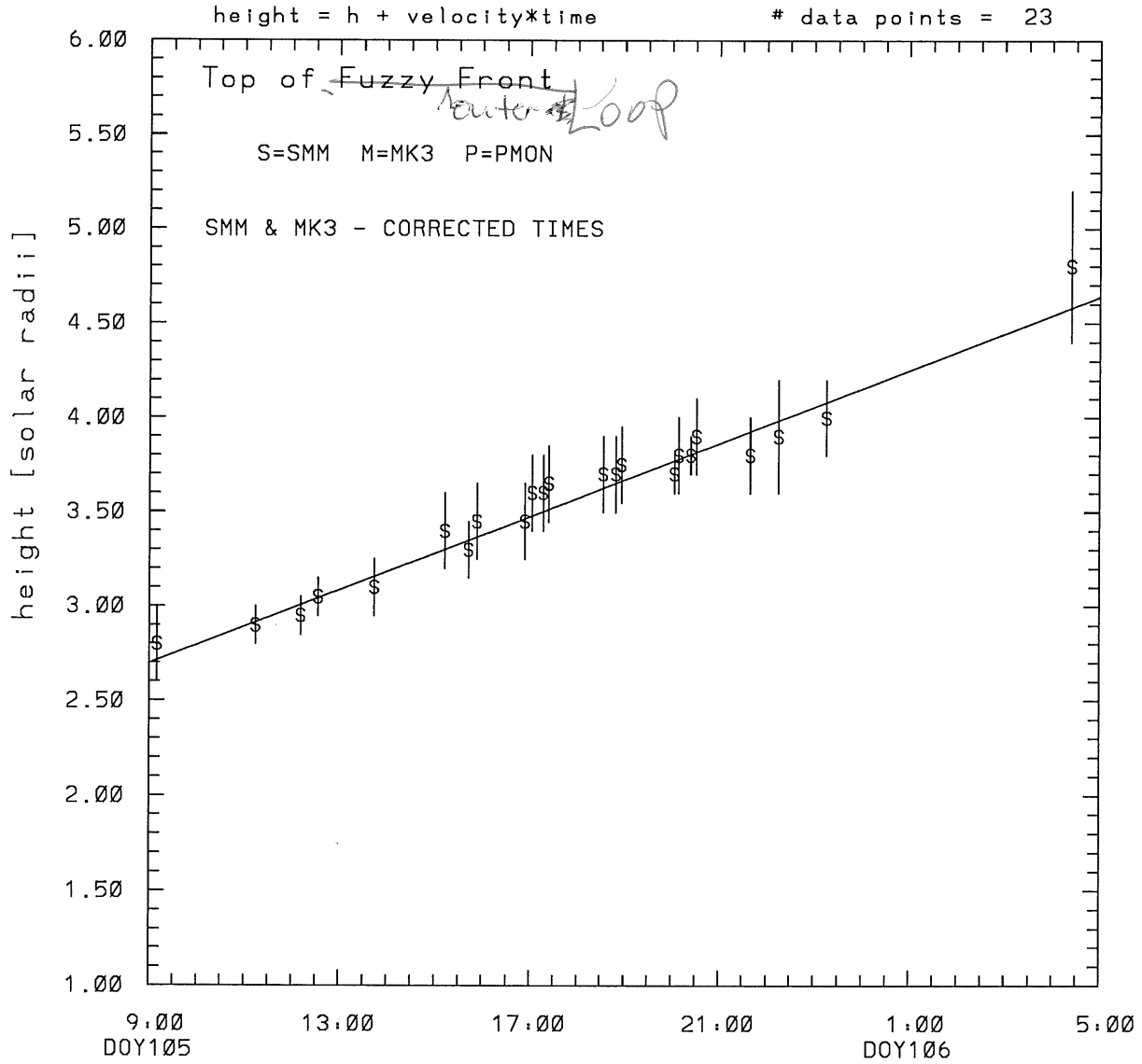
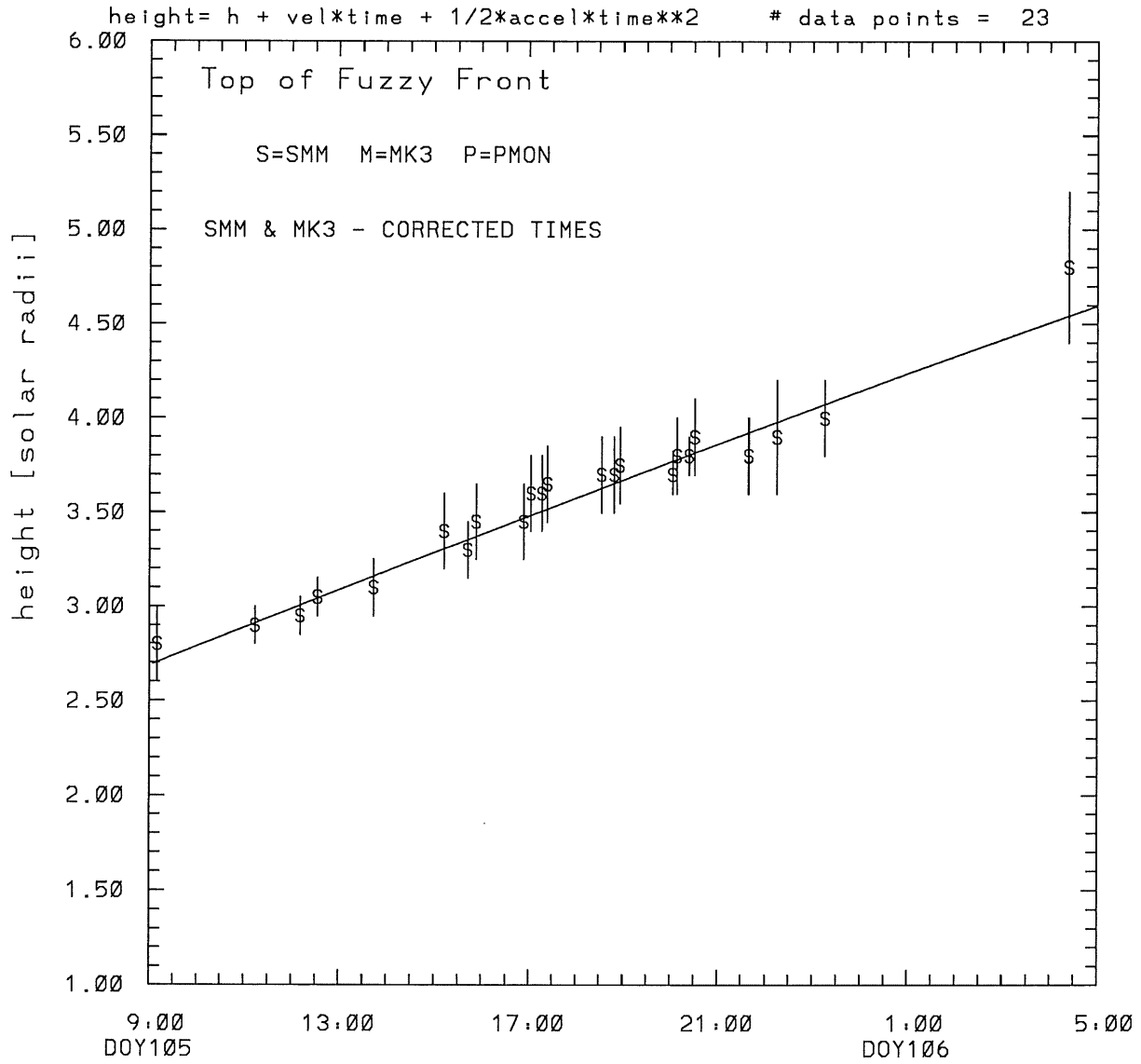


SMM C/P 1980 DOY105 305 +/- 0 degrees



tstart=DOY104 15:32 +/- 2.3 [min.]  
radial velocity= 19. +/- 1. [km/sec]

SMM C/P 1980 DOY105 305 +/- 0 degrees

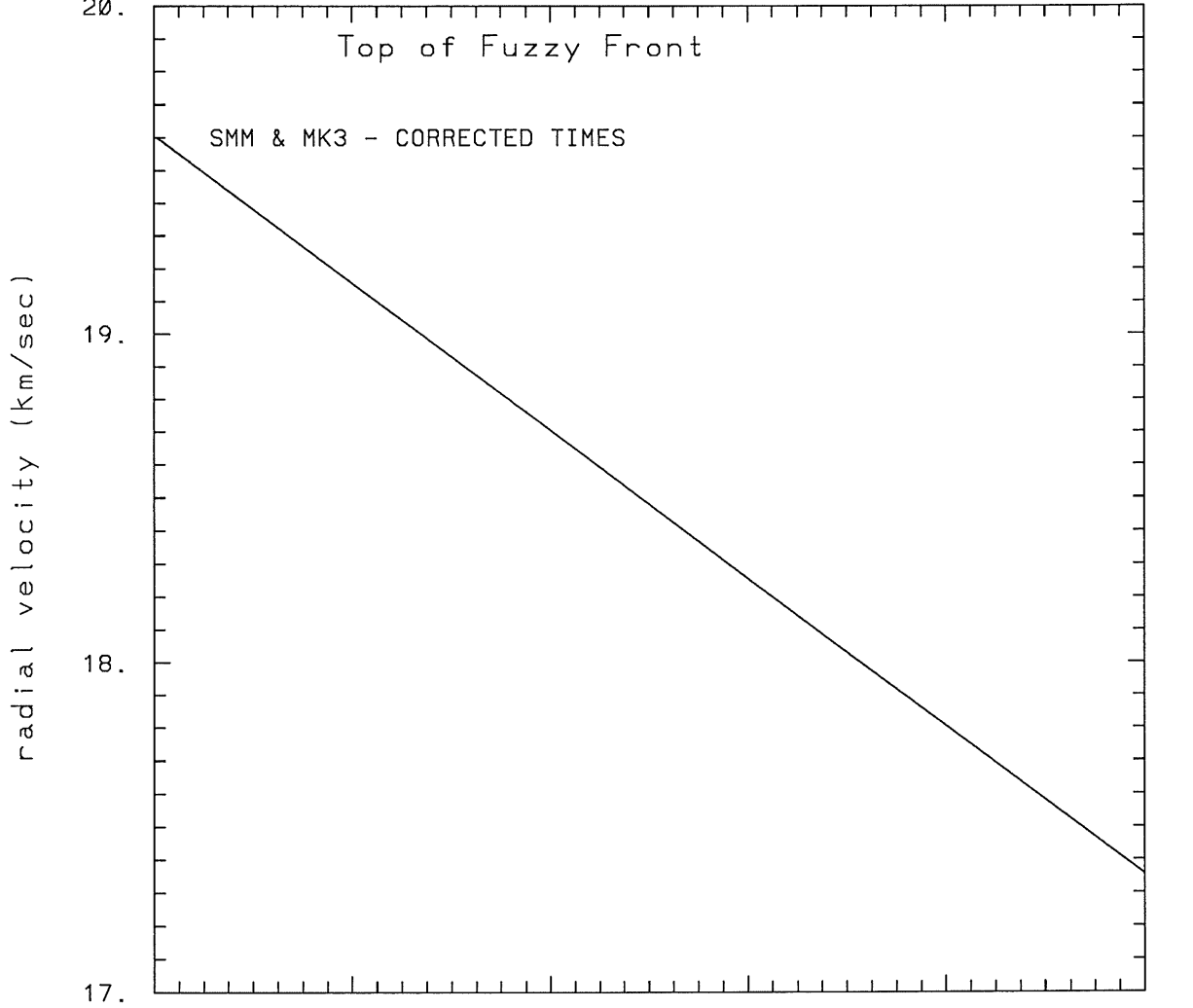


tstart=DOY104 17: 8 +/- 453.6 [min.]

radial acceleration = 0.0000 +/- 0.0001 [km/sec\*\*2]

SMM C/P 1980 DOY105 305 +/- 0 degrees

height= h + vel\*time + 1/2\*accel\*time\*\*2 # data points = 23



9:00 DOY105 13:00 17:00 21:00 1:00 DOY106 5:00

tstart=DOY104 17: 8 +/- 453.6 [min.]

radial acceleration=-.313E-04 km/sec\*\*2

\*\*\*\*\*  
This is a 1 order run  
\*\*\*\*\*

\*\*\*\*\*  
INPUT:  
\*\*\*\*\*

year	day	time	radii	error in radius	angle	error in angle	datatype
1980	105	9: 9:49	2.80	+/- 0.20	305.0	+/- 0.5	SMM
1980	105	11:13:52	2.90	+/- 0.10	305.0	+/- 0.5	SMM
1980	105	12:11: 2	2.95	+/- 0.10	305.0	+/- 0.5	SMM
1980	105	12:33:14	3.05	+/- 0.10	305.0	+/- 1.0	SMM
1980	105	13:44: 0	3.10	+/- 0.15	305.0	+/- 1.0	SMM
1980	105	15:12:48	3.40	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	15:42:41	3.30	+/- 0.15	305.0	+/- 1.0	SMM
1980	105	15:53:14	3.45	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	16:53:44	3.45	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	17: 2:56	3.60	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	17:16:47	3.60	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	17:23:54	3.65	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	18:33:13	3.70	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	18:49:13	3.70	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	18:56:20	3.75	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	20: 3:44	3.70	+/- 0.10	305.0	+/- 1.0	SMM
1980	105	20: 9:13	3.80	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	20:24:13	3.80	+/- 0.10	305.0	+/- 1.0	SMM
1980	105	20:31:20	3.90	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	21:39:44	3.80	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	22:15:33	3.90	+/- 0.30	305.0	+/- 1.0	SMM
1980	105	23:16: 0	4.00	+/- 0.20	305.0	+/- 1.0	SMM
1980	106	4:23:54	4.80	+/- 0.40	305.0	+/- 1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Top of Fuzzy Front  
\*\*\*\*\*

\*\*\*\*\*  
OUTPUT:  
\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.105E+04 +/- 0.234E+01$  [minutes]  
In more convenient units:  
Event began at DOY 104 15:32 +/- 0.234E+01 [minutes]

Origin defined at DOY105 9: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 19. +/- 1. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.270E+01 +/- 0.303E-01 [solar radii]  
c(2) = 0.162E-02 +/- 0.605E-04 [radii/min]  
c(2) = 0.188E+02 +/- 0.701E+00 [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)= 0.44527E-01 [radii] see Bevington pg. 114

error in c(2)= 0.76588E-04 [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) = 305. +/- 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 9: 9 = 0.000E+00 km/sec

The TOTAL velocity at 9: 9 = 19. km/sec

The TANGENTIAL velocity at 11:13 = 0.000E+00 km/sec

The TOTAL velocity at 11:13 = 19. km/sec

The TANGENTIAL velocity at 12:11 = 0.000E+00 km/sec

The TOTAL velocity at 12:11 = 19. km/sec

The TANGENTIAL velocity at 12:33 = 0.000E+00 km/sec

The TOTAL velocity at 12:33 = 19. km/sec

The TANGENTIAL velocity at 13:44 = 0.000E+00 km/sec

The TOTAL velocity at 13:44 = 19. km/sec

The TANGENTIAL velocity at 15:12 = 0.000E+00 km/sec

The TOTAL velocity at 15:12 = 19. km/sec

The TANGENTIAL velocity at 15:42 = 0.000E+00 km/sec

The TOTAL velocity at 15:42 = 19. km/sec

The TANGENTIAL velocity at 15:53 = 0.000E+00 km/sec

The TOTAL velocity at 15:53 = 19. km/sec

The TANGENTIAL velocity at 16:53 = 0.000E+00 km/sec

The TOTAL velocity at 16:53 = 19. km/sec

The TANGENTIAL velocity at 17: 2 = 0.000E+00 km/sec

The TOTAL velocity at 17: 2 = 19. km/sec

The TANGENTIAL velocity at 17:16 = 0.000E+00 km/sec

The TOTAL velocity at 17:16 = 19. km/sec

The TANGENTIAL velocity at 17:23 = 0.000E+00 km/sec

The TOTAL velocity at 17:23 = 19. km/sec

The TANGENTIAL velocity at 18:33 = 0.000E+00 km/sec

The TOTAL velocity at 18:33 = 19. km/sec

The TANGENTIAL velocity at 18:49 = 0.000E+00 km/sec

The TOTAL velocity at 18:49 = 19. km/sec

The TANGENTIAL velocity at 18:56 = 0.000E+00 km/sec

The TOTAL velocity at 18:56 = 19. km/sec

The TANGENTIAL velocity at 20: 3 = 0.000E+00 km/sec

The TOTAL velocity at 20: 3 = 19. km/sec

The TANGENTIAL velocity at 20: 9 = 0.000E+00 km/sec

The TOTAL velocity at 20: 9 = 19. km/sec

The TANGENTIAL velocity at 20:24 = 0.000E+00 km/sec

The TOTAL velocity at 20:24 = 19. km/sec

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

The TOTAL velocity at 20:31 = 19. km/sec

The TANGENTIAL velocity at 21:39 = 0.000E+00 km/sec

The TOTAL velocity at 21:39 = 19. km/sec

The TANGENTIAL velocity at 22:15 = 0.000E+00 km/sec

The TOTAL velocity at 22:15 = 19. km/sec

The TANGENTIAL velocity at 23:16 = 0.000E+00 km/sec

The TOTAL velocity at 23:16 = 19. km/sec

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

The TOTAL velocity at 4:23 = 19. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.44

Standard Deviation in start time measurement = 0.255E+03

Error in time = 0.26507E+03 using best fit method  
See Taylor Error Analysis [Univ of Colorado] pg.78

Value of reduced Chi Squared returned from nllst2 = 0.474E-02  
Reduced Chi Squared = 0.135E+00  
Chi Squared = 0.283E+01  
The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.980E+00  
The probability that no LINEAR correlation exists between the variables = -0.1892E-10  
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	105	9: 9:49	2.80	+/- 0.20	305.0	+/- 0.5	SMM
1980	105	11:13:52	2.90	+/- 0.10	305.0	+/- 0.5	SMM
1980	105	12:11: 2	2.95	+/- 0.10	305.0	+/- 0.5	SMM
1980	105	12:33:14	3.05	+/- 0.10	305.0	+/- 1.0	SMM
1980	105	13:44: 0	3.10	+/- 0.15	305.0	+/- 1.0	SMM
1980	105	15:12:48	3.40	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	15:42:41	3.30	+/- 0.15	305.0	+/- 1.0	SMM
1980	105	15:53:14	3.45	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	16:53:44	3.45	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	17: 2:56	3.60	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	17:16:47	3.60	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	17:23:54	3.65	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	18:33:13	3.70	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	18:49:13	3.70	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	18:56:20	3.75	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	20: 3:44	3.70	+/- 0.10	305.0	+/- 1.0	SMM
1980	105	20: 9:13	3.80	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	20:24:13	3.80	+/- 0.10	305.0	+/- 1.0	SMM
1980	105	20:31:20	3.90	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	21:39:44	3.80	+/- 0.20	305.0	+/- 1.0	SMM
1980	105	22:15:33	3.90	+/- 0.30	305.0	+/- 1.0	SMM
1980	105	23:16: 0	4.00	+/- 0.20	305.0	+/- 1.0	SMM
1980	106	4:23:54	4.80	+/- 0.40	305.0	+/- 1.0	SMM

\*\*\*\*\*  
Structure being measured:  
Top of Fuzzy Front  
\*\*\*\*\*

\*\*\*\*\*  
OUTPUT:  
\*\*\*\*\*

START TIME:

Event began at  $t = 0 + -0.954E+03 +/- 0.454E+03$  [minutes]  
In more convenient units:  
Event began at DOY 104 17: 8 +/- 0.454E+03 [minutes]

Origin defined at DOY105 9: 0

RADIAL INFORMATION:



RADIAL ACCELERATION =  $-0.313\text{E-}04 \pm 0.100\text{E-}03 \text{ km/sec}^2$

The computed RADIAL coefficients and errors FROM NLLST2 are:

$c(1) = 0.269\text{E+}01 \pm 0.491\text{E-}01$  [solar radii]  
 $c(2) = 0.169\text{E-}02 \pm 0.242\text{E-}03$  [radii/min]  
 $c(2) = 0.196\text{E+}02 \pm 0.280\text{E+}01$  [km/sec]  
 $c(3) = -0.809\text{E-}07 \pm 0.259\text{E-}06$  [radii/min\*\*2]  
 $c(3) = -0.313\text{E-}04 \pm 0.100\text{E-}03$  [km/sec\*\*2]

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in  $c(1) = 0.68807\text{E-}01$  [radii] Bevington pg 154 (8-30)  
Exact error in  $c(1) = 0.52722\text{E-}02$  [radii] Bevington pg 154 (8-28)  
Approximate error in  $c(2) = 0.24909\text{E-}03$  [radii/min] Bevington pg 154 (8-30)  
Exact error in  $c(2) = 0.33497\text{E-}04$  [radii/min] Bevington pg 154 (8-28)  
Approximate error in  $c(3) = 0.21567\text{E-}06$  [radii/min\*\*] Bevington pg 154 (8-30)  
Exact error in  $c(3) = 0.38413\text{E-}07$  [radii/min\*\*] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

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

The computed ANGULAR coefficients and errors FROM NLLST2 are:

$a(1) = 305. \pm 0.$  [degrees]  
 $a(2) = 0.000\text{E+}00 \pm 0.000\text{E+}00$  [degrees/min]  
 $a(2) = 0.000\text{E+}00 \pm 0.000\text{E+}00$  [rad/sec]  
 $a(3) = 0.000\text{E+}00 \pm 0.000\text{E+}00$  [degrees/min\*\*2]  
 $a(3) = 0.000\text{E+}00 \pm 0.000\text{E+}00$  [rad/sec\*\*2]

THE TANGENTIAL AND TOTAL VELOCITIES AT EACH DATA POINT ARE:

The TANGENTIAL velocity at 9: 9 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 9: 9 = 20. km/sec

The TANGENTIAL velocity at 11:13 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 11:13 = 19. km/sec

The TANGENTIAL velocity at 12:11 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 12:11 = 19. km/sec

The TANGENTIAL velocity at 12:33 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 12:33 = 19. km/sec

The TANGENTIAL velocity at 13:44 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 13:44 = 19. km/sec

The TANGENTIAL velocity at 15:12 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 15:12 = 19. km/sec

The TANGENTIAL velocity at 15:42 =  $0.000\text{E+}00$  km/sec

The TOTAL velocity at 15:42 = 19. km/sec

The TANGENTIAL velocity at 15:53 = 0.000E+00 km/sec  
The TOTAL velocity at 15:53 = 19. km/sec

The TANGENTIAL velocity at 16:53 = 0.000E+00 km/sec  
The TOTAL velocity at 16:53 = 19. km/sec

The TANGENTIAL velocity at 17: 2 = 0.000E+00 km/sec  
The TOTAL velocity at 17: 2 = 19. km/sec

The TANGENTIAL velocity at 17:16 = 0.000E+00 km/sec  
The TOTAL velocity at 17:16 = 19. km/sec

The TANGENTIAL velocity at 17:23 = 0.000E+00 km/sec  
The TOTAL velocity at 17:23 = 19. km/sec

The TANGENTIAL velocity at 18:33 = 0.000E+00 km/sec  
The TOTAL velocity at 18:33 = 19. km/sec

The TANGENTIAL velocity at 18:49 = 0.000E+00 km/sec  
The TOTAL velocity at 18:49 = 19. km/sec

The TANGENTIAL velocity at 18:56 = 0.000E+00 km/sec  
The TOTAL velocity at 18:56 = 18. km/sec

The TANGENTIAL velocity at 20: 3 = 0.000E+00 km/sec  
The TOTAL velocity at 20: 3 = 18. km/sec

The TANGENTIAL velocity at 20: 9 = 0.000E+00 km/sec  
The TOTAL velocity at 20: 9 = 18. km/sec

The TANGENTIAL velocity at 20:24 = 0.000E+00 km/sec  
The TOTAL velocity at 20:24 = 18. km/sec

The TANGENTIAL velocity at 20:31 = 0.000E+00 km/sec  
The TOTAL velocity at 20:31 = 18. km/sec

The TANGENTIAL velocity at 21:39 = 0.000E+00 km/sec  
The TOTAL velocity at 21:39 = 18. km/sec

The TANGENTIAL velocity at 22:15 = 0.000E+00 km/sec  
The TOTAL velocity at 22:15 = 18. km/sec

The TANGENTIAL velocity at 23:16 = 0.000E+00 km/sec  
The TOTAL velocity at 23:16 = 18. km/sec

The TANGENTIAL velocity at 4:23 = 0.000E+00 km/sec  
The TOTAL velocity at 4:23 = 17. km/sec

\*\*\*\*\*

The following info is for estimating goodness of the fit

\*\*\*\*\*

Fit is ok [ier=1]

Standard Deviation in the height = 0.44

Standard Deviation in start time measurement = 0.255E+03

Value of reduced Chi Squared returned from nllst2 = 0.494E-02

Reduced Chi Squared = 0.156E+00

Chi Squared = 0.311E+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 = 0.9702E+00

The correlation between the data and the time\*\*2 term = 0.7727E+00

The correlation between the data and the complete equation of motion = 0.9497E+00

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