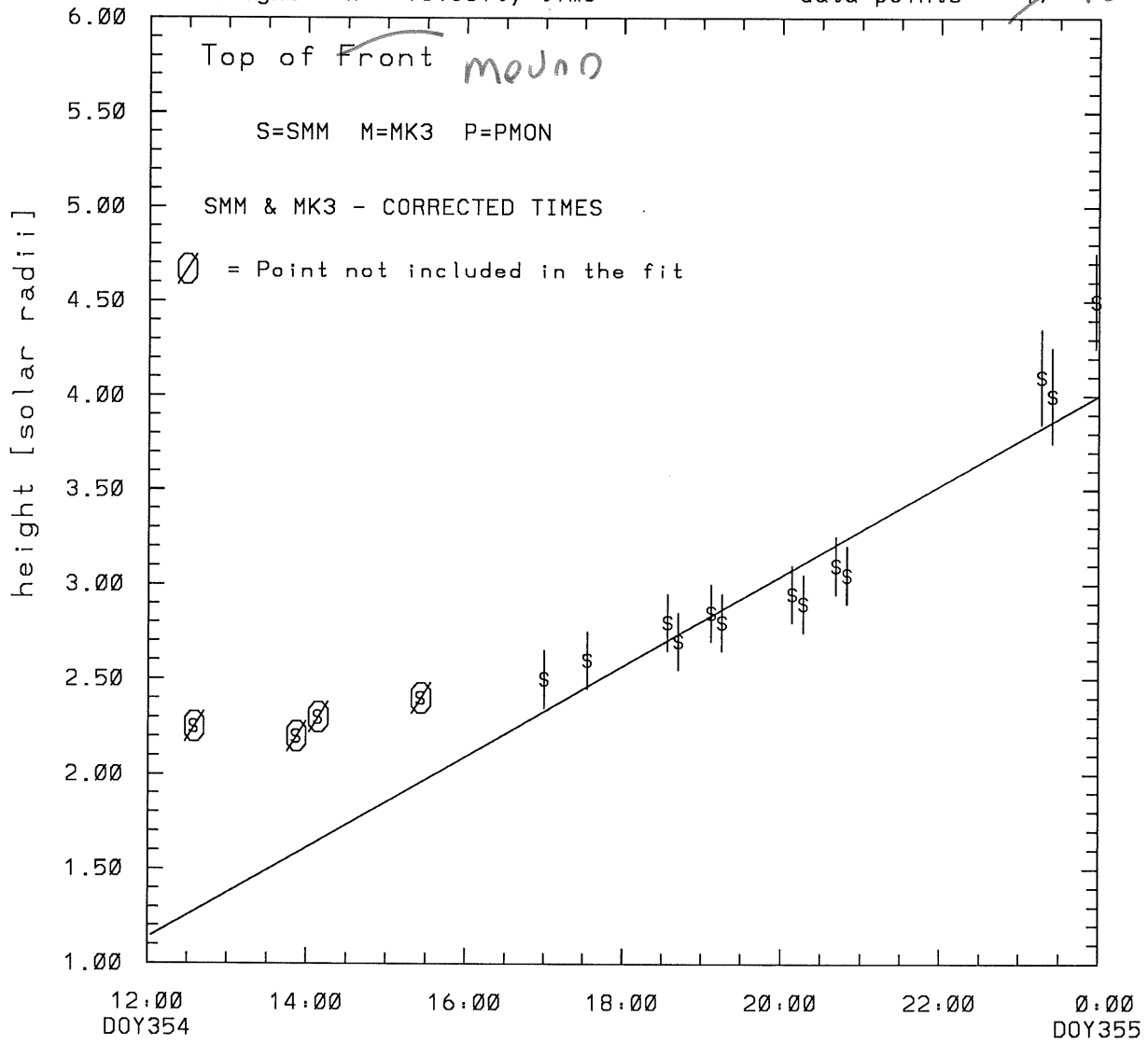


SMM C/P 1987 DOY354 65 +/- 0 degrees

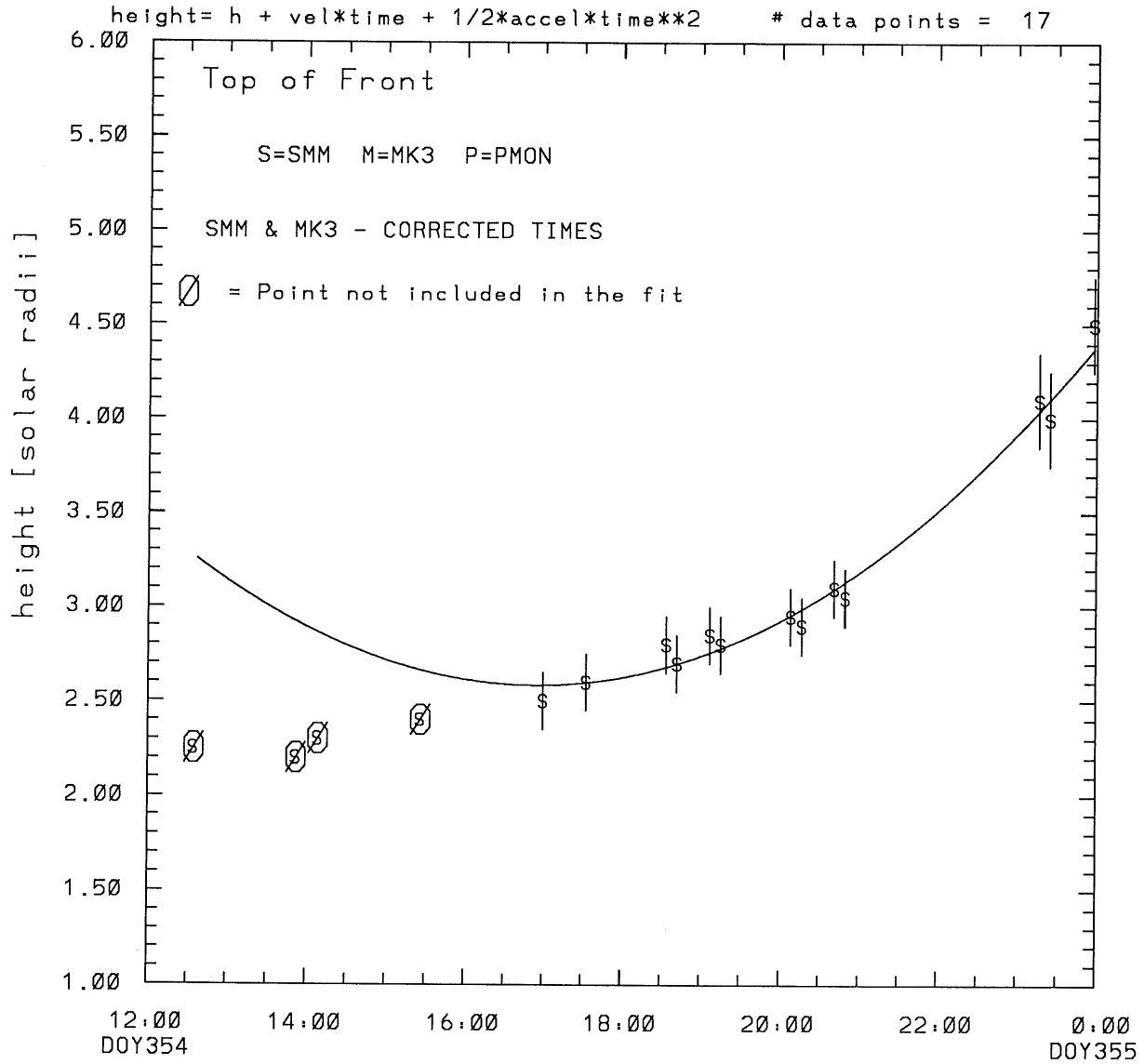
height = h + velocity*time

data points = 17 ¹³



tstart=DOY354 11:26 +/- 1.4 [min.]
radial velocity= 46. +/- 5. [km/sec]

SMM C/P 1987 DOY354 65 +/- 0 degrees

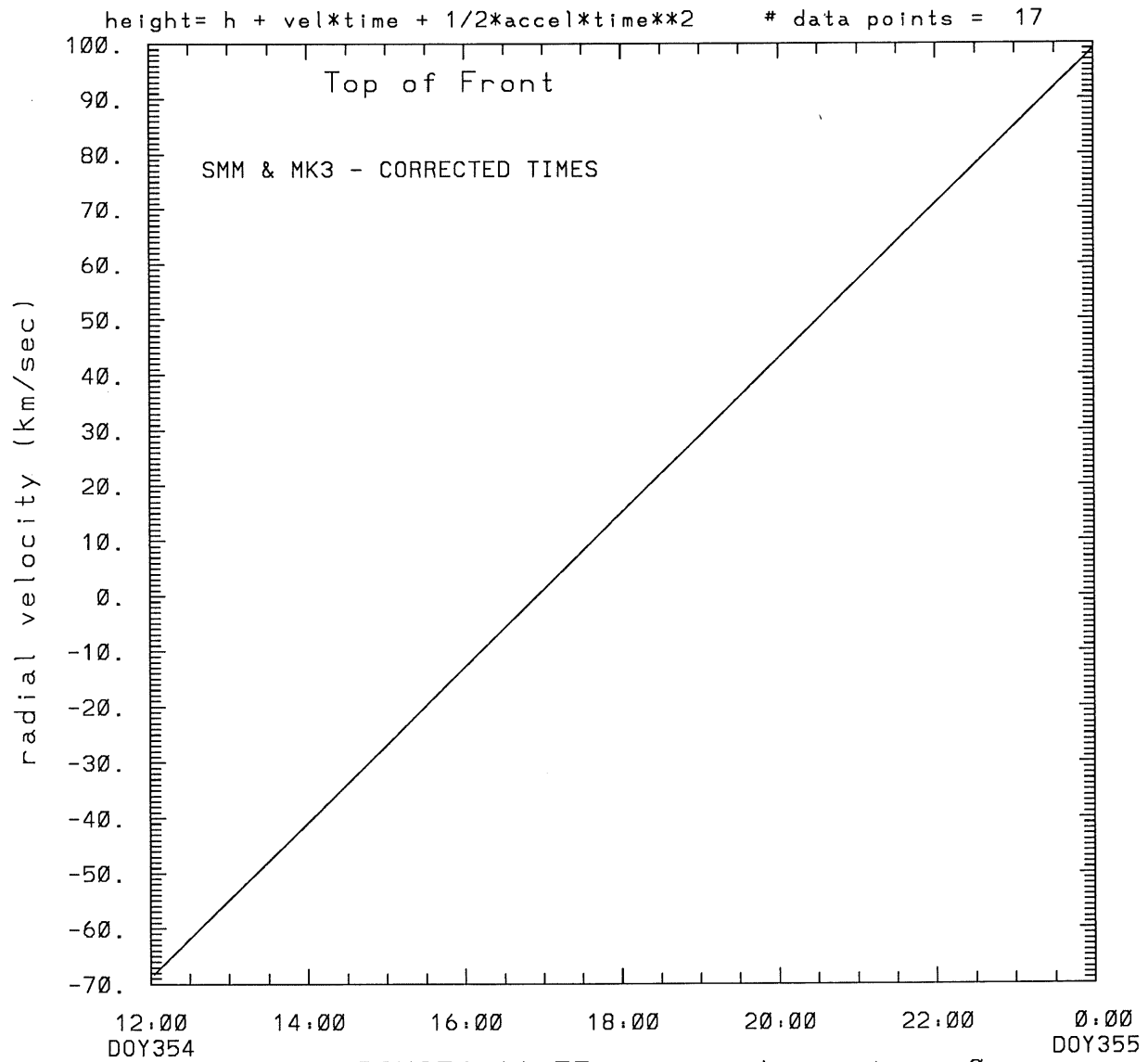


tstart=DOY354 16:55 from derivative=0

Event begins at 2.58 Solar Radii

radial acceleration = 0.0039 +/- 0.0005 [km/sec**2]

SMM C/P 1987 DOY354 65 +/- 0 degrees



tstart=DOY354 16:55 from derivative=0
Event begins at 2.58 Solar Radii
radial acceleration=0.388E-02 km/sec**2

This is a 1 order run

INPUT:

year	day	time	radii	error in radius	angle	error in angle	datatype
1987	354	12:34: 9	2.25	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	13:51:38	2.20	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	14: 8: 9	2.30	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	15:25:48	2.40	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	16:59:57	2.50	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	17:32:58	2.60	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	18:34: 8	2.80	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	18:42:22	2.70	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	19: 7: 7	2.85	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	19:15:23	2.80	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	20: 8:16	2.95	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	20:16:32	2.90	+/- 0.15	65.0 +/-	0.5	SMM
1987	354	20:41:17	3.10	+/- 0.15	65.0 +/-	1.0	SMM
1987	354	20:49:32	3.05	+/- 0.15	65.0 +/-	1.0	SMM
1987	354	23:16:35	4.10	+/- 0.25	65.0 +/-	1.0	SMM
1987	354	23:24:51	4.00	+/- 0.25	65.0 +/-	1.0	SMM
1987	354	23:57:51	4.50	+/- 0.25	65.0 +/-	1.0	SMM

Structure being measured:

Top of Front

OUTPUT:

START TIME:

Event began at t = 0 + -0.341E+02 +/- 0.138E+01 [minutes]

In more convenient units:

Event began at DOY 354 11:26 +/- 0.138E+01 [minutes]

Origin defined at DOY354 12: 0

RADIAL INFORMATION:

RADIAL VELOCITY = 46. +/- 5. km/sec

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.114E+01 +/- 0.185E+00 [solar radii]

c(2) = 0.398E-02 +/- 0.395E-03 [radii/min]

c(2) = 0.462E+02 +/- 0.458E+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)= 0.22717E+00 [radii] see Bevington pg. 114

error in c(2)= 0.50489E-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) = 65. +/- 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 12:34 = 0.000E+00 km/sec

The TOTAL velocity at 12:34 = 46. km/sec

The TANGENTIAL velocity at 13:51 = 0.000E+00 km/sec

The TOTAL velocity at 13:51 = 46. km/sec

The TANGENTIAL velocity at 14: 8 = 0.000E+00 km/sec

The TOTAL velocity at 14: 8 = 46. km/sec

The TANGENTIAL velocity at 15:25 = 0.000E+00 km/sec

The TOTAL velocity at 15:25 = 46. km/sec

The TANGENTIAL velocity at 16:59 = 0.000E+00 km/sec

The TOTAL velocity at 16:59 = 46. km/sec

The TANGENTIAL velocity at 17:32 = 0.000E+00 km/sec

The TOTAL velocity at 17:32 = 46. km/sec

The TANGENTIAL velocity at 18:34 = 0.000E+00 km/sec

The TOTAL velocity at 18:34 = 46. km/sec

The TANGENTIAL velocity at 18:42 = 0.000E+00 km/sec

The TOTAL velocity at 18:42 = 46. km/sec

The TANGENTIAL velocity at 19: 7 = 0.000E+00 km/sec

The TOTAL velocity at 19: 7 = 46. km/sec

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

The TOTAL velocity at 19:15 = 46. km/sec

The TANGENTIAL velocity at 20: 8 = 0.000E+00 km/sec

The TOTAL velocity at 20: 8 = 46. km/sec

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

The TOTAL velocity at 20:16 = 46. km/sec

The TANGENTIAL velocity at 20:41 = 0.000E+00 km/sec

The TOTAL velocity at 20:41 = 46. km/sec

The TANGENTIAL velocity at 20:49 = 0.000E+00 km/sec

The TOTAL velocity at 20:49 = 46. km/sec

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

The TOTAL velocity at 23:16 = 46. km/sec

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

The TOTAL velocity at 23:24 = 46. km/sec

The TANGENTIAL velocity at 23:57 = 0.000E+00 km/sec

The TOTAL velocity at 23:57 = 46. 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 = 0.196E+03

Error in time = 0.39673E+03 using best fit method

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

Value of reduced Chi Squared returned from nllst2 = 0.289E-01

Reduced Chi Squared = 0.759E+00

Chi Squared = 0.114E+02

The probability for exceeding chi square = 0.100E+01

The correlation coefficient = 0.909E+00

The probability that no LINEAR correlation exists between the variables = 0.4318E-06

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
1987	354	12:34: 9	2.25	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	13:51:38	2.20	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	14: 8: 9	2.30	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	15:25:48	2.40	-----	65.00 +/-	----	SMM THIS POINT WASN'T USED IN THE FIT.
1987	354	16:59:57	2.50 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	17:32:58	2.60 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	18:34: 8	2.80 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	18:42:22	2.70 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	19: 7: 7	2.85 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	19:15:23	2.80 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	20: 8:16	2.95 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	20:16:32	2.90 +/-	0.15	65.0 +/-	0.5	SMM
1987	354	20:41:17	3.10 +/-	0.15	65.0 +/-	1.0	SMM
1987	354	20:49:32	3.05 +/-	0.15	65.0 +/-	1.0	SMM
1987	354	23:16:35	4.10 +/-	0.25	65.0 +/-	1.0	SMM
1987	354	23:24:51	4.00 +/-	0.25	65.0 +/-	1.0	SMM
1987	354	23:57:51	4.50 +/-	0.25	65.0 +/-	1.0	SMM

Structure being measured:

Top of Front

OUTPUT:

START TIME:

tstart=DOY354 16:55 from derivative = 0

Event begins at 2.58 Solar Radii

Origin defined at DOY354 12: 0

RADIAL INFORMATION:

RADIAL ACCELERATION = 0.388E-02 +/- 0.479E-03 km/sec**2

The computed RADIAL coefficients and errors FROM NLLST2 are:

c(1) = 0.346E+01 +/- 0.299E+00 [solar radii]
c(2) = -0.593E-02 +/- 0.124E-02 [radii/min]
c(2) = -0.688E+02 +/- 0.143E+02 [km/sec]
c(3) = 0.100E-04 +/- 0.124E-05 [radii/min**2]

$$c(3) = 0.388E-02 +/- 0.479E-03 \text{ [km/sec**2]}$$

The computed ERRORS in coefficients [BEVINGTON] are:

Approximate error in $c(1) = 0.31909E+00$ [radii] Bevington pg 154 (8-30)
Exact error in $c(1) = 0.13095E-01$ [radii] Bevington pg 154 (8-28)
Approximate error in $c(2) = 0.17637E-02$ [radii/min] Bevington pg 154 (8-30)
Exact error in $c(2) = 0.62726E-04$ [radii/min] Bevington pg 154 (8-28)
Approximate error in $c(3) = 0.22226E-05$ [radii/min**] Bevington pg 154 (8-30)
Exact error in $c(3) = 0.74269E-07$ [radii/min**] Bevington pg 154 (8-28)

ANGULAR INFORMATION:

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

The computed ANGULAR coefficients and errors FROM NLLST2 are:

$a(1) = 65. +/- 0.$ [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 12:34 = $0.000E+00$ km/sec

The TOTAL velocity at 12:34 = -61. km/sec

The TANGENTIAL velocity at 13:51 = $0.000E+00$ km/sec

The TOTAL velocity at 13:51 = -43. km/sec

The TANGENTIAL velocity at 14: 8 = $0.000E+00$ km/sec

The TOTAL velocity at 14: 8 = -39. km/sec

The TANGENTIAL velocity at 15:25 = $0.000E+00$ km/sec

The TOTAL velocity at 15:25 = -21. km/sec

The TANGENTIAL velocity at 16:59 = $0.000E+00$ km/sec

The TOTAL velocity at 16:59 = 1. km/sec

The TANGENTIAL velocity at 17:32 = $0.000E+00$ km/sec

The TOTAL velocity at 17:32 = 9. km/sec

The TANGENTIAL velocity at 18:34 = $0.000E+00$ km/sec

The TOTAL velocity at 18:34 = 23. km/sec

The TANGENTIAL velocity at 18:42 = $0.000E+00$ km/sec

The TOTAL velocity at 18:42 = 25. km/sec

The TANGENTIAL velocity at 19: 7 = $0.000E+00$ km/sec

The TOTAL velocity at 19: 7 = 31. km/sec

The TANGENTIAL velocity at 19:15 = $0.000E+00$ km/sec

The TOTAL velocity at 19:15 = 33. km/sec

The TANGENTIAL velocity at 20: 8 = 0.000E+00 km/sec

The TOTAL velocity at 20: 8 = 45. km/sec

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

The TOTAL velocity at 20:16 = 47. km/sec

The TANGENTIAL velocity at 20:41 = 0.000E+00 km/sec

The TOTAL velocity at 20:41 = 53. km/sec

The TANGENTIAL velocity at 20:49 = 0.000E+00 km/sec

The TOTAL velocity at 20:49 = 55. km/sec

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

The TOTAL velocity at 23:16 = 89. km/sec

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

The TOTAL velocity at 23:24 = 91. km/sec

The TANGENTIAL velocity at 23:57 = 0.000E+00 km/sec

The TOTAL velocity at 23:57 = 98. 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 = 0.196E+03

Value of reduced Chi Squared returned from nllst2 = 0.573E-02

Reduced Chi Squared = 0.302E+00

Chi Squared = 0.422E+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 = 0.5060E+00

The correlation between the data and the time**2 term = 0.6524E+00

The correlation between the data and the complete equation of motion = 0.9615E+00

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