COMET P/ KLEMOLA 1965 VI = 1976 X

The following improved orbital elements, by S. Nakano, are from 68 observations 1965 November 1 to 1977 January 21. Perturbations by Mercury to Pluto were taken into account. The mean residual is 1.79 arc seconds.

Epoch =	1965 Aug. 28.0		1976 Aug. 10.0 ET	
T =	1965 Aug. 18.36085	+/- 0.00447	1976 Aug. 10.19137 ET	
Peri. =	148.04011	+/- 0.00418	148.88003	
Node =	181.99351	+/- 0.00345	181.57187	1950.0
Inc. =	10.60665	+/- 0.00052	10.64003	
q =	1.7633993	+/- 0.0000183	1.7655797	AU
e =	0.6422187	+/- 0.0000037	0.6417171	
a =	4.9287076	+/- 0.0000003	4.9278926	AU
n =	0.090075047	+/- 0.000000008	0.090097394	
P =	10.942	+/- 0.0000009	10.939	years
		(+/- 0.00034 day)		

The following prediction for the next return is from the above elements. The comet passed 0.94 AU from Jupiter in 1978 May.

Epoch =	1987 July 24.0 ET		
T =	1987 July 22.63526 ET		
Peri. =	154.54277		
Node =	175.78512	1950.0	
Inc. =	10.95614		
q =	1.7727565	AU	
e =	0.6404550		
a =	4.9305556	AU	
n =	0.090024409		
P =	10.948	years	

There are the residuals from the above elements on the next pages:

continued

Date/ UT		*** O-C ***		Code / Obs.
		"	"	
1965 Nov.	1.123E	0.3-	0.7+	808 / km
	2.023E	0.9+	2.1+	808 / km
	18.783E	0.8-	0.0	060 / by
	18.903E	0.1-	1.3-	060 / by
	23.783E	1.6+	0.1-	060 / by
	27.044E	0.5-	0.1+	808 / km
Dec.	13.080E	1.2-	2.4-	808 / km
1976 Aug.	6.068	(7.2-	1.7-)	511 / ss
	7.077	(10.4+	8.8-)	511 / ss
	8.100	0.2-	3.1+	511 / ss
	8.115	0.2-	3.6+	511 / ss
	10.257	1.3+	0.7+	662 / km
	10.290	0.8+	0.6+	662 / km
	18.580	2.4-	0.3+	380 / kj
	18.591	4.6-	0.4-	380 / kj
	19.647	1.2+	0.3+	380 / kj
	19.678	1.1+	0.7+	380 / kj
	19.954	2.3+	2.3+	993 / rt
	20.664	1.5+	0.3+	372 / sk
	20.697	1.6+	0.8+	372 / sk
	21.702	0.6+	0.8-	380 / kj
	23.502	1.0-	0.1+	885 / ur
	23.612	1.1+	0.1-	885 / ur
	24.004	0.5-	3.6+	993 / pl
	24.976	0.6-	0.1+	046 / mr
	24.985	0.5+	0.9+	046 / mr
	25.149	0.2+	0.2-	801 / mc
	25.928	0.2-	1.7-	046 / mr
	25.939	3.0+	3.0-	046 / mr
	26.180	0.7-	0.0	801 / sa
	26.913	0.3+	0.1-	046 / mr
	26.923	1.1+	0.0	046 / mr
	28.001	0.2+	0.9-	993 / dk
	28.644	1.3-	0.0	390 / kr
	28.715	(5.5-	1.5+)	390 / kr
	28.884	0.6+	1.4-	046 / vv
	28.895	0.4+	2.7-	046 / vv
	31.612	4.3+	0.4-	372 / sk
Sept.	13.848	1.4-	2.5-	046 / vv
	14.507	1.7+	0.1-	885 / ur

continued

Date/ UT		*** O-C ***		Code / Obs.
		"	"	
1976 Sept.	14.510	1.9+	1.1-	885 / ur
	15.500	0.2+	1.1-	885 / ur
	15.507	1.4+	0.3-	885 / ur
	15.659	0.1-	1.3-	323 / jp
	16.550	0.7-	0.9+	882 / sz
	17.500	0.7-	3.9-	885 / ur
	17.507	0.1+	2.0-	885 / ur
	17.556	0.5-	1.0-	882 / sz
	19.235	0.0	0.7+	691 / rm
	19.244	0.1+	0.7+	691 / rm
	20.968	0.8+	2.0-	046 / mr
	22.993	2.8+	2.9+	993 / sy
	23.183	1.3-	0.1+	801 / sa
	23.915	0.5+	1.2-	046 / vv
	25.856	2.9-	2.0+	094 / cr
	27.272	4.6-	0.8-	675 / hl
	27.289	3.1-	0.4+	675 / hl
	27.842	0.1-	0.6-	046 / mr
	27.856	2.5-	0.5-	046 / mr
	28.738	0.8-	2.3-	094 / cr
	28.783	4.3-	4.5+	094 / cr
	29.817	1.8-	1.2-	094 / cr
	29.840	1.1-	0.1-	094 / cr
Oct.	19.645	0.1-	0.5+	323 / jp
	25.805	0.8+	1.7-	046 / mr
	25.820	(1.3-	5.2+)	046 / mr
	26.781	2.3+	1.1-	046 / mr
	26.795	(0.1-	7.4+)	046 / mr
	27.036	1.8+	2.3+	801 / sw
	27.846	3.2+	1.2-	046 / mr
	27.860	3.1+	3.3+	046 / mr
	27.898	4.4-	4.1+	993 / sf
Dec.	24.082	(2.3-	5.1-)	693 / rm
	24.127	(2.9+	8.3-)	693 / rm
1977 Jan.	21.027	3.0+	2.8+	801 / sa

( ) --------- Rejected Obs.

1980 April 4

S. Nakano