

**Table 1:** Averaged JPL reprocessing (JP1) yaw-rate solutions, during 1996-2008 for all the Block II's /IIA's, operational during this period; unweighted (*avg*) and weighted means (*Wavg*-according the solution sigmas). Since no solutions were available for PRN 12 and 20, the nominal values are listed. Also shown are single observation RMS(*rms*, *Wrms*). The formal sigmas of the means are much smaller, by about  $\sqrt{(N_o - rej)}$ , or more. The 10-sigma residual rejection has been used. *So* is the standard deviation of the normalised residuals. Ideally, it should be 1. Here, the JP1 yaw-rate solutions have been arbitrary selected (not all available are included), all a-priori solutions (sigma = 0.01deg/sec) have been excluded. Usual solution sigmas are well below 0.005 deg/sec. In all cases, the solutions are well distributed within the respective period of operation. These average yaw-rates should be more reliable and precise than a yearly averages in Kouba (2008). They are also more complete as they include all the II's and IIA's since Jan 1996. The weighted averages have been coded in the data statement of the updated *eclips.f*, where the data yaw-rates are used for all the Block II/IIA's, when the Block is IIR or IIF, appropriate values are assigned. It is hoped these average statistics are useful when yaw-rates are not estimated, and for assessing their variation during the 13 year period.

**Warning:** *The Block II/IIA shadow eclipsing model is valid only after Nov 5, 1995 when all the satellites have been biased by +0.5 deg and consequently their shadow behaviour is known. Prior this date, shadow-crossing data should not be used.*

prn	svn	blk	End	Wavg	Wrms	avg	rms	So	No	rej
1	32	IIA	Oct-08	0.1211	0.0071	0.1189	0.0086	2.6	228	5
2	13	II	May-04	0.1339	0.0036	0.1324	0.0072	1.4	35	4
3	33	IIA	in oper.	0.1230	0.0035	0.1216	0.0062	1.5	205	0
4	34	IIA	in oper.	0.1233	0.0021	0.1224	0.0038	1.2	190	0
5	35	IIA	Jun-09	0.1180	0.0061	0.1195	0.0063	2.4	101	4
6	36	IIA	in oper.	0.1266	0.0036	0.1252	0.0077	1.7	212	0
7	37	IIA	Jan-08	0.1269	0.0071	0.1262	0.0107	2.9	236	0
8	38	IIA	in oper.	0.1033	0.0027	0.1028	0.0039	1.7	62	0
9	39	IIA	in oper.	0.1278	0.0011	0.1275	0.0021	0.6	85	0
10	40	IIA	in oper.	0.0978	0.0066	0.0975	0.0069	2.4	175	0
12	10	II	Mar-96	0.1990						
14	14	II	Apr-00	0.0815	0.0062	0.0820	0.0076	2.5	85	3
15	15	II	Mar-07	0.1303	0.0084	0.1288	0.0062	3.3	145	2
16	16	II	Oct-00	0.0838	0.0037	0.0830	0.0059	1.3	96	0
17	17	II	Feb-05	0.1401	0.0064	0.1389	0.0054	2.7	94	1
18	18	II	Aug-00	0.1069	0.0014	0.1063	0.0032	0.6	63	0
19	19	II	Sep-01	0.0980	0.0009	0.0983	0.0016	0.6	31	0
20	20	II	Dec-96	0.1030						
21	21	II	Jan-03	0.1366	0.0065	0.1355	0.0070	2.4	96	0
22	22	IIA	Aug-03	0.1025	0.0097	0.1028	0.0092	4.0	44	1
23	23	IIA	Feb-04	0.1140	0.0074	0.1163	0.0103	2.2	139	0
24	24	IIA	in oper.	0.1089	0.0073	0.1082	0.0067	3.1	175	10
25	25	IIA	May-10	0.1001	0.0049	0.0995	0.0073	2.5	76	0
26	26	IIA	in oper.	0.1227	0.0047	0.1214	0.0061	1.8	238	0
27	27	IIA	in oper.	0.1194	0.0016	0.1189	0.0037	1.0	77	0
28	28	IIA	Aug-97	0.1260	0.0002	0.1259	0.0004	0.1	25	0
29	29	IIA	Oct-07	0.1228	0.0096	0.1223	0.0078	3.7	221	6
30	30	IIA	Jul-11	0.1165	0.0080	0.1178	0.0071	3.0	112	0
31	31	IIA	Oct-05	0.0969	0.0043	0.0962	0.0067	1.5	195	0
32*	23	IIA	in oper.	0.1152	0.0084	0.1139	0.0065	1.5	26	0
avg				0.1176	0.0050	0.1147	0.0061	2.0	sum	
rms				0.0217	0.0027	0.0151	0.0025		3441	36

\* Starts in Dec 2006 only