

Material Suplementario 1. TIEMPO TERRESTRE Y TIEMPO UNIVERSAL

El valor de ΔT está dado en segundos para cada año.

$$\Delta T = TD - UT$$

<i>year</i>	ΔT	<i>year</i>	ΔT	<i>year</i>	ΔT	<i>year</i>	ΔT	<i>year</i>	ΔT
1620	+121	1700	+ 7	1780	+16	1860	+ 7.7	1940	+24.3
1622	112	1702	7	1782	16	1862	7.3	1942	25.3
1624	103	1704	8	1784	16	1864	6.2	1944	26.2
1626	95	1706	8	1786	16	1866	5.2	1946	27.3
1628	88	1708	9	1788	16	1868	2.7	1948	28.2
1630	+82	1710	+ 9	1790	+16	1870	+ 1.4	1950	+29.1
1632	77	1712	9	1792	15	1872	- 1.2	1952	30.0
1634	72	1714	9	1794	15	1874	- 2.8	1954	30.7
1636	68	1716	9	1796	14	1876	- 3.8	1956	31.4
1638	63	1718	10	1798	13	1878	- 4.8	1958	32.2
1640	+60	1720	+10	1800	+13.1	1880	- 5.5	1960	+33.1
1642	56	1722	10	1802	12.5	1882	- 5.3	1962	34.0
1644	53	1724	10	1804	12.2	1884	- 5.6	1964	35.0
1646	51	1726	10	1806	12.0	1886	- 5.7	1966	36.5
1648	48	1728	10	1808	12.0	1888	- 5.9	1968	38.3
1650	+46	1730	+10	1810	+12.0	1890	- 6.0	1970	+40.2
1652	44	1732	10	1812	12.0	1892	- 6.3	1972	42.2
1654	42	1734	11	1814	12.0	1894	- 6.5	1974	44.5
1656	40	1736	11	1816	12.0	1896	- 6.2	1976	46.5
1658	38	1738	11	1818	11.9	1898	- 4.7	1978	48.5
1660	+35	1740	+11	1820	+11.6	1900	- 2.8	1980	+50.5
1662	33	1742	11	1822	11.0	1902	- 0.1	1982	52.2
1664	31	1744	12	1824	10.2	1904	+ 2.6	1984	53.8
1666	29	1746	12	1826	9.2	1906	5.3	1986	54.9
1668	26	1748	12	1828	8.2	1908	7.7	1988	55.8
1670	+24	1750	+12	1830	+ 7.1	1910	+10.4	1990	+56.9
1672	22	1752	13	1832	6.2	1912	13.3	1992	58.3
1674	20	1754	13	1834	5.6	1914	16.0	1994	60.0
1676	18	1756	13	1836	5.4	1916	18.2	1996	61.6
1678	16	1758	14	1838	5.3	1918	20.2	1998	63.0
1680	+14	1760	+14	1840	+ 5.4	1920	+21.1	2000	+63.8
1682	12	1762	14	1842	5.6	1922	22.4	2002	64.3
1684	11	1764	14	1844	5.9	1924	23.5	2004	64.6
1686	10	1766	15	1846	6.2	1926	23.8	2006	64.8
1688	9	1768	15	1848	6.5	1928	24.3	2008	65.5
1690	+ 8	1770	+15	1850	+ 6.8	1930	+24.0	2010	66.1
1692	7	1772	15	1852	7.1	1932	23.9		
1694	7	1774	15	1854	7.3	1934	23.9		
1696	7	1776	16	1856	7.5	1936	23.7		
1698	7	1778	16	1858	7.6	1938	24.0		

Material Suplementario 2

TRIÁNGULOS SUCESIVOS UTILIZADOS PARA HALLAR EL MOID APOPHIS - TIERRA

Nº de triángulo	Puntos	denominación vértice	(λ_a, λ'_i)	Δ
1º	A	el peor (x_1, y_1)	(203,5 ; 204)	0,008969152
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(203,5 , 203,5)	0,002124299
	el reflejado de A	es aceptado	(204 ; 203,5)	0,008769151
2º	A	el peor (x_1, y_1)	(204 ; 203,5)	0,008769151
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(203,5 , 203,5)	0,002124299
	el reflejado de A	es peor	(203,5 ; 204)	0,008969152
3º	A	el peor (x_1, y_1)	(203,875 ; 203,625)	0,004471426
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(203,5 , 203,5)	0,002124299
	el reflejado de A	es peor	(203,625 ; 203,875)	0,004660539
4º	A	el peor (x_1, y_1)	(203,8125 ; 203,6875)	0,002444289
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(203,5 , 203,5)	0,002124299
	el reflejado de A	no aceptado	(203,6875 ; 203,8125)	0,002613844
5º	A	el peor (x_1, y_1)	(203,5 , 203,5)	0,002124299
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(203,78125 ; 203,71875)	0,001604953
	el reflejado de A	es aceptado	(204,28125 ; 204,21875)	0,001237449
6º	A	el peor (x_1, y_1)	(203,78125 ; 203,71875)	0,001604953
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(204,28125 ; 204,21875)	0,001237449
	el reflejado de A	es aceptado	(204,5 ; 204,5)	0,001366387
7º	A	el peor (x_1, y_1)	(204,5 ; 204,5)	0,001366387
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(204,28125 ; 204,21875)	0,001237449
	el reflejado de A	es peor	(203,78125 ; 203,71875)	0,001604953
8º	A	el peor (x_1, y_1)	(204,28125 ; 204,21875)	0,001237449
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(204,3203125 ; 204,3046875)	0,000786592
	el reflejado de A	es aceptado	(204,0390625 ; 204,0859375)	0,000865685
9º	A	el peor (x_1, y_1)	(204,0390625 ; 204,0859375)	0,000865685
	B	el mejor (x_2, y_2)	(204 , 204)	0,000405845
	C	el otro (x_3, y_3)	(204,3203125 ; 204,3046875)	0,000786592
	el reflejado de A	es peor	(204,28125 ; 204,21875)	0,001237449
10º	A	el peor (x_1, y_1)	(204,3203125 ; 204,3046875)	0,000786592
	B	el mejor (x_2, y_2)	(204,0996094 ; 204,1191406)	0,000372432
	C	el otro (x_3, y_3)	(204 , 204)	0,000405845
	el reflejado de A	es peor	(203,7792969 ; 203,8144531)	0,0013002
11º	A	el peor (x_1, y_1)	(204 , 204)	0,000405845
	B	el mejor (x_2, y_2)	(204,1850586 ; 204,1821289)	0,000297558
	C	el otro (x_3, y_3)	(204,0996094 ; 204,1191406)	0,000372432
	el reflejado de A	es peor	(204,284668 ; 204,3012695)	0,00069596
12º	A	el peor (x_1, y_1)	(204,0996094 ; 204,1191406)	0,000372432
	B	el mejor (x_2, y_2)	(204,071167 ; 204,0753174)	0,000204859
	C	el otro (x_3, y_3)	(204,1850586 ; 204,1821289)	0,000297558
	el reflejado de A	no aceptado	(204,1566162 ; 204,1383057)	0,000377671
	contracción de A	es aceptado	(204,1138611 ; 204,1239319)	0,00022627

13°	A	el peor (x_1, y_1)	(204,1850586 ; 204,1821289)	0,000297558
	B	el mejor (x_2, y_2)	(204,071167 ; 204,0753174)	0,000204859
	C	el otro (x_3, y_3)	(204,1138611 ; 204,1239319)	0,00022627
	el reflejado de A	no aceptado	(203,9999695 ; 204,0171204)	0,000501744
	contracción de A	es el mejor j	(204,1387864 ; 204,1408768)	0,00017424
14°	A	el peor (x_1, y_1)	(204,1138611 ; 204,1239319)	0,00022627
	B	el mejor (x_2, y_2)	(204,1387864 ; 204,1408768)	0,00017424
	C	el otro (x_3, y_3)	(204,071167 ; 204,0753174)	0,000204859
	el reflejado de A	es el mejor j	(204,0960923 ; 204,0922623)	0,000157685
	el expandido de a	no aceptado	(204,0783235 ; 204,0605927)	0,000355114
15°	A	el peor (x_1, y_1)	(204,071167 ; 204,0753174)	0,000204859
	B	el mejor (x_2, y_2)	(204,0960923 ; 204,0922623)	0,000157685
	C	el otro (x_3, y_3)	(204,1387864 ; 204,1408768)	0,00017424
	el reflejado de A	es peor, no aceptado	(204,1637117 ; 204,1578217)	0,000249908
	contracción de A	es peor, no aceptado	(204,1005345 ; 204,1123333)	0,000251877
	reducción de A	es mejor, es aceptado	(204,0836297 ; 204,0837899)	0,000163708
	B		(204,0960923 ; 204,0922623)	0,000157685
	reducción de C	es peor, no aceptado	(204°,1174394 ; 204°,1165696)	0,000378159
16°	A	el peor (x_1, y_1)	(204,1387864 ; 204,1408768)	0,00017424
	B	el mejor (x_2, y_2)	(204,0960923 ; 204,0922623)	0,000157685
	C	el otro (x_3, y_3)	(204,0836297 ; 204,0837899)	0,000163708
	el reflejado de A	es peor	(204,0409356 ; 204,0351754)	0,000294268
	contracción de A	es el mejor j	(204,1144515 ; 204,1153689)	0,000136719
17°	A	el peor (x_1, y_1)	(204,0836297 ; 204,0837899)	0,000163708
	B	el mejor (x_2, y_2)	(204,1144515 ; 204,1153689)	0,000136719
	C	el otro (x_3, y_3)	(204,0960923 ; 204,0922623)	0,000157685
	reflejado de A	es aceptado	(204,1269141 ; 204,1238413)	0,000155774
18°	A	el peor (x_1, y_1)	(204,0960923 ; 204,0922623)	0,000157685
	B	el mejor (x_2, y_2)	(204,1144515 ; 204,1153689)	0,000136719
	C	el otro (x_3, y_3)	(204,1269141 ; 204,1238413)	0,000155774
	reflejado de A	no aceptado	(204,1452733 ; 204,1469479)	0,000186753
	contracción de A	es aceptado	(204,1083876 ; 204,1059337)	0,000141344
19°	A	el peor (x_1, y_1)	(204,1269141 ; 204,1238413)	0,000155774
	B	el mejor (x_2, y_2)	(204,1144515 ; 204,1153689)	0,000136719
	C	el otro (x_3, y_3)	(204,1083876 ; 204,1059337)	0,000141344
	reflejado de A	es aceptado	(204,095925 ; 204,0974613)	0,000147174
20°	A	el peor (x_1, y_1)	(204,095925 ; 204,0974613)	0,000147174
	B	el mejor (x_2, y_2)	(204,1144515 ; 204,1153689)	0,000136719
	C	el otro (x_3, y_3)	(204,1083876 ; 204,1059337)	0,000141344
	reflejado de A	no aceptado	(204,1269141 ; 204,1238413)	0,000155774
	contracción de A	es aceptado	(204,1036723 ; 204,1040563)	0,000137793
21°	A	el peor (x_1, y_1)	(204,1083876 ; 204,1059337)	0,000141344
	B	el mejor (x_2, y_2)	(204,1144515 ; 204,1153689)	0,000136719
	C	el otro (x_3, y_3)	(204,1036723 ; 204,1040563)	0,000137793
	reflejado de A	no aceptado	(204,1097362 ; 204,1134915)	0,000152519
	contracción de A	el mejor, es aceptado	(204,1087248 ; 204,1078232)	0,000136288
22°	A	el peor (x_1, y_1)	(204,1036723 ; 204,1040563)	0,000137793
	B	el mejor (x_2, y_2)	(204,1087248 ; 204,1078232)	0,000136288
	C	el otro (x_3, y_3)	(204,1144515 ; 204,1153689)	0,000136719
	reflejado de A	no aceptado	(204,119504 ; 204,1191359)	0,000139756
	contracción de A	el mejor, es aceptado	(204,1076302 ; 204,1078262)	0,000136116
23°	A	el peor (x_1, y_1)	(204,1144515 ; 204,1153689)	0,000136719
	B	el mejor (x_2, y_2)	(204,1076302 ; 204,1078262)	0,000136116
	C	el otro (x_3, y_3)	(204,1087248 ; 204,1078232)	0,000136288

El MOID se halló en el triángulo nº 23 (señalado en color azul)

DATOS ADICIONALES DEL MOID

Distancia (d) en Km.
20362,65142
este es el MOID (U.A.)
Distancia (d) en R_t (ecuatoriales)
3,192638981
Unos 3,2 Radios ecuatoriales.
Distancia d desde superficie Tierra
13984,65142
Unos 14000 Km.

COORDENADAS DE APOPHIS Y LA TIERRA EN EL MOID

COORDENADAS CARTESIANAS DE APOPHIS Y TIERRA EN SU MOID (X,Y,Z) . DISTANCIAS AL SOL (r_a, r_t) y ANOMALIA VERDADERA (V_a, V_t)

X_a	Y_a	Z_a	r_a	V_a
-0,915512693	-0,409670028	0,000153928	1,002992047	233,54697
X_t	Y_t	Z_t	r_t	V_t
-0,915466406	-0,409657989	2,64905E-05	1,002944869	101,0940301

COORDENADAS ECLÍPTICAS DE APOPHIS – TIERRA -SOL EN SU MOID

APOPHIS		TIERRA		SOL	
λ_a°	β_a°	λ_t°	β_t°	λ_s°	b_s
204°,1076302	0,008793108	204,1078262	0,001513338	24,1078262	-0,001513338
$\lambda_a^\circ, ', ''$	$\beta_a^\circ, ', ''$	$\lambda_t^\circ, ', ''$	$\beta_t^\circ, ', ''$	$\lambda_s^\circ, ', ''$	$\beta_s^\circ, ', ''$
204° 6' 27,47"	0° 0' 31"66	204° 6' 28,17"	0° 0' 5",45	24° 6' 28,17"	- 0° , 0' , 5",45

INCLINACIÓN DE LA ECLÍPTICA EN SU MOID

INCLINACIÓN ECLÍPTICA (ϵ)
ϵ_t° (13 - IX - 2023)
23,40847452
$\epsilon_t^\circ, ', ''$ (13 - IX - 2023)
23° 24' 30",51

COORDENADAS ECUATORIALES DEL SOL Y FECHA DEL MOID

COORDENADAS ECUATORIALES DEL SOL (α_s, δ_s) EN SU MOID Y FECHA EN LA QUE PRODUCE ESTE MOID

α_s°	δ_s°	FECHA DEL MOID
22,32634502	9,337419928	13 de abril últimas horas de la tarde
22° 19m 34,84s	9° 20' 14,71"	
α_s (h m s)		
1h 29m 18,32s		

Material Suplementario 3. Teoría VSOP87 (Bretagnon y Francou)**Mercurio**

series	Nº	A	B	C
L ₀	1	440250710	0,00000000	0,00000000
	2	40989415	1,48302034	26087,90314157
	3	5046294	4,47785490	52175,80628310
	4	855347	1,16520300	78263,70942500
	5	165590	4,11969200	104351,61256600
	6	34562	0,77931000	130439,51571000
	7	7583	3,71350000	156527,41880000
	8	3560	1,51200000	1109,37860000
	9	1803	4,10330000	5661,33200000
	10	1726	0,35830000	182615,32200000
	11	1590	2,99510000	25028,52120000
	12	1365	4,59920000	27197,28170000
	13	1017	0,88030000	31749,23520000
	14	714	1,54100000	24978,52500000
	15	644	5,30300000	21535,95000000
	16	451	6,05000000	51116,42400000
	17	404	3,28200000	208703,22500000
	18	352	5,24200000	20426,57100000
	19	345	2,79200000	15874,61800000
	20	343	5,76500000	955,60000000
	21	339	5,86300000	25558,21200000
	22	325	1,33700000	53285,18500000
	23	273	2,49500000	529,69100000
	24	264	3,91700000	57837,13800000
	25	260	0,98700000	4551,95300000
	26	239	0,11300000	1059,38200000
	27	235	0,26700000	11322,66400000

28	217	0,66000000	13521,75100000
29	209	2,09200000	47623,85300000
30	183	2,62900000	27043,50300000
31	182	2,43400000	25661,30500000
32	176	4,53600000	51066,42800000
33	173	2,45200000	24498,83000000
34	142	3,36000000	37410,56700000
35	138	0,29100000	10213,28600000
36	125	3,72100000	39609,65500000
37	118	2,78100000	77204,32700000
38	106	4,20600000	19804,82700000

ΣL_0

L_1

1	2608814706223	0,00000000	0,00000000
2	1126008	6,21703970	26087,90314160
3	303471	3,05565500	52175,80628300
4	80538	6,10455000	78263,70942000
5	21245	2,83532000	104351,61257000
6	5592	5,82680000	130439,51570000
7	1472	2,51850000	156527,41880000
8	388	5,48000000	182615,32200000
9	352	3,05200000	1109,37900000
10	103	2,14900000	208703,22500000
11	94	6,12000000	27197,28000000
12	91	0,00000000	24978,52000000
13	52	5,62000000	5661,33000000
14	44	4,57000000	25028,52000000
15	28	3,04000000	51066,43000000
16	27	5,09000000	234791,13000000

ΣL_1

L_2

1	53050	0,00000000	0,00000000
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	2	16904	4,69072000	26087,90314000
	3	7397	1,34740000	52175,80630000
	4	3018	4,45640000	78263,70940000
	5	1107	1,26230000	104351,61260000
	6	378	4,32000000	130439,51600000
	7	123	1,06900000	156527,41900000
	8	39	4,08000000	182615,32000000
	9	15	4,63000000	1109,38000000
	10	12	0,79000000	208703,23000000

ΣL_2

L₃

	1	188	0,03500000	52175,80600000
	2	142	3,12500000	26087,90300000
	3	97	3,00000000	78263,71000000
	4	44	6,02000000	104351,61000000
	5	35	0,00000000	0,00000000
	6	18	2,78000000	130439,52000000
	7	7	5,82000000	156527,42000000
	8	3	2,57000000	182615,32000000

ΣL_3

L₄

	1	114	3,14160000	0,00000000
	2	3	2,03000000	26087,90000000
	3	2	1,42000000	78263,71000000
	4	2	4,50000000	52175,81000000
	5	1	4,50000000	104351,61000000
	6	1	1,27000000	130439,52000000

ΣL_4

L₅

	1	1	3,14000000	0,00000000
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ΣL_5

B₀

	1	11737529	1,98357499	26087,90314157
	2	2388077	5,03738960	52175,80628310

3	1222840	3,14159270	0,00000000
4	543252	1,79644400	78263,70942500
5	129779	4,83232500	104351,61256600
6	31867	1,58088000	130439,51571000
7	7963	4,60970000	156527,41880000
8	2014	1,35320000	182615,32200000
9	514	4,37800000	208703,22500000
10	209	2,02000000	24978,52500000
11	208	4,91800000	27197,28200000
12	132	1,11900000	234791,12800000
13	121	1,81300000	53285,18500000
14	100	5,65700000	20426,57100000

ΣB_0

B_1

1	429151	3,50169800	26087,90314200
2	146234	3,14159300	0,00000000
3	22675	0,01515000	52175,80628000
4	10895	0,48540000	78263,70942000
5	6353	3,42940000	104351,61260000
6	2496	0,16050000	130439,51570000
7	860	3,18500000	156527,41900000
8	278	6,21000000	182615,32200000
9	86	2,95000000	208703,23000000
10	28	0,29000000	27197,28000000
11	26	5,98000000	234791,13000000

ΣB_1

B_2

1	11831	4,79066000	26087,90314000
2	1914	0,00000000	0,00000000
3	1045	1,21220000	52175,80630000
4	266	4,43400000	78263,70900000
5	170	1,62300000	104351,61300000

6	96	4,80000000	130439,52000000
7	45	1,61000000	156527,42000000
8	18	4,67000000	182615,32000000
9	7	1,43000000	208703,23000000

ΣB_2

B_3

1	235	0,35400000	26087,90300000
2	161	0,00000000	0,00000000
3	19	4,36000000	52175,81000000
4	6	2,51000000	78263,71000000
5	5	6,14000000	104351,61000000
6	3	3,12000000	130439,52000000
7	2	6,27000000	156527,42000000

ΣB_3

B_4

1	4	1,75000000	26087,90000000
2	1	3,14000000	0,00000000

ΣB_4

R_0

1	39528272	0,00000000	0,00000000
2	7834132	6,19233720	26087,90314160
3	795526	2,95989700	52175,80628300
4	121282	6,01064200	78263,70942500
5	21922	2,77820000	104351,61257000
6	4354	5,82890000	130439,51570000
7	918	2,59700000	156527,41900000
8	290	1,42400000	25028,52100000
9	260	3,02800000	27197,28200000
10	202	5,64700000	182615,32200000
11	201	5,59200000	31749,23500000
12	142	6,25300000	24978,52500000
13	100	3,73400000	21535,95000000

ΣR_0

R ₁	1	217348	4,65617200	26087,90314200
	2	44142	1,42386000	52175,80628000
	3	10094	4,47466000	78263,70942000
	4	2433	1,24230000	104351,61260000
	5	1624	0,00000000	0,00000000
	6	604	4,29300000	130439,51600000
	7	153	1,06100000	156527,41900000
	8	39	4,11000000	182615,32000000

ΣR₁

R ₂	1	3118	3,08230000	26087,90310000
	2	1245	6,15180000	52175,80630000
	3	425	2,92600000	78263,70900000
	4	136	5,98000000	104351,61300000
	5	42	2,75000000	130439,52000000
	6	22	3,14000000	0,00000000
	7	13	5,80000000	156527,42000000

ΣR₂

R ₃	1	33	1,68000000	26087,90000000
	2	24	4,63000000	52175,81000000
	3	12	1,39000000	78263,71000000
	4	5	4,44000000	104351,61000000
	5	2	1,21000000	130439,52000000

ΣR₃

Venus

series	N°	A	B	C
L ₀	1	317614667,00	0,0000000	0,0000000 10213,285546
	2	1353968,00	5,5931332	2 20426,571090
	3	89892,00	5,3065000	0
	4	5477,00	4,4163000	7860,4194000 11790,629100
	5	3456,00	2,6996000	0
	6	2372,00	2,9938000	3930,2097000
	7	1664,00	4,2502000	1577,3435000
	8	1438,00	4,1575000	9683,5946000
	9	1317,00	5,1867000	26,2983000 30639,856600
	10	1201,00	6,1536000	0
	11	769,00	0,8160000	9437,7630000
	12	761,00	1,9500000	529,6910000
	13	708,00	1,0650000	775,5230000
	14	585,00	3,9980000	191,4480000 15720,839000
	15	500,00	4,1230000	0 19367,189000
	16	429,00	3,5860000	0
	17	327,00	5,6770000	5507,5530000 10404,734000
	18	326,00	4,5910000	0
	19	232,00	3,1630000	9153,9040000
	20	180,00	4,6530000	1109,3790000 19651,048000
	21	155,00	5,5700000	0
	22	128,00	4,2260000	20,7750000
	23	128,00	0,9620000	5661,3320000
	24	106,00	1,5370000	801,8210000
				Σ L ₀
L ₁	1	1021352943053,00	0,0000000	0,0000000 10213,285550
	2	95708,00	2,4642400	0 20426,571090
	3	14445,00	0,5162500	0 30639,857000
	4	213,00	1,7950000	0

	5	174,00	2,6550000	26,2980000
	6	152,00	6,1060000	1577,3440000
	7	82,00	5,7000000	191,4500000
	8	70,00	2,6800000	9437,7600000
	9	52,00	3,6000000	775,5200000
	10	38,00	1,0300000	529,6900000
	11	30,00	1,2500000	5507,5500000
	12	25,00	6,1100000	10404,7300000
				0
				ΣL_1
L ₂	1	54127,00	0,0000000	0,0000000
				10213,285500
	2	3891,00	0,3451000	0
				20426,571100
	3	1338,00	2,0201000	0
				0
	4	24,00	2,0500000	26,3000000
				30639,860000
	5	19,00	3,5400000	0
				0
	6	10,00	3,9700000	775,5200000
				0
	7	7,00	1,5200000	1577,3400000
				0
	8	6,00	1,0000000	191,4500000
				0
				ΣL_2
				10213,286000
L ₃	1	136,00	4,8040000	0
				20426,570000
	2	78,00	3,6700000	0
				0
	3	26,00	0,0000000	0,0000000
				0
				ΣL_3
L ₄	1	114,00	3,1416000	0,0000000
				20426,570000
	2	3,00	5,2100000	0
				10213,290000
	3	2,00	2,5100000	0
				0
				ΣL_4
L ₅	1	1,00	3,1400000	0,0000000
				0
				ΣL_5
				10213,285546
B ₀	1	5923638,00	0,2670278	2
				20426,571090
	2	40108,00	1,1473700	0
				0
	3	32815,00	3,1415900	0,0000000
				0
	4	1011,00	1,0895000	30639,856600

				0
				18073,705000
	5	149,00	6,2540000	0
	6	138,00	0,8600000	1577,3440000
	7	130,00	3,6720000	9437,7630000
	8	120,00	3,7050000	2352,8660000
				22003,915000
	9	108,00	4,5390000	0
				ΣB_0
				10213,285546
B ₁	1	513348,00	1,8036430	0
				20426,571100
	2	4380,00	3,3862000	0
	3	199,00	0,0000000	0,0000000
				30639,857000
	4	197,00	2,5300000	0
				ΣB_1
				10213,285550
B ₂	1	22378,00	3,3850900	0
	2	282,00	0,0000000	0,0000000
				20426,571000
	3	173,00	5,2560000	0
				30639,860000
	4	27,00	3,8700000	0
				ΣB_2
				10213,286000
B ₃	1	647,00	4,9920000	0
	2	20,00	3,1400000	0,0000000
				20426,570000
	3	6,00	0,7700000	0
				30639,860000
	4	3,00	5,4400000	0
				ΣB_3
				10213,290000
B ₄	1	14,00	0,3200000	0
				ΣB_4
R ₀	1	72334821,00	0,0000000	0,0000000
				10213,285546
	2	489824,00	4,0215180	0
				20426,571100
	3	1658,00	4,9021000	0
	4	1632,00	2,8455000	7860,4194000
				11790,629100
	5	1378,00	1,1285000	0

	6	498,00	2,5870000	9683,5950000
	7	374,00	1,4230000	3930,2100000
	8	264,00	5,5290000	9437,7630000
				15720,8390000
	9	237,00	2,5510000	0
				19367,1890000
	10	222,00	2,0130000	0
	11	126,00	2,7280000	1577,3440000
				10404,7340000
	12	119,00	3,0200000	0
				ΣR_0
				10213,285550
R ₁	1	34551,00	0,8919900	0
				20426,5710000
	2	234,00	1,7720000	0
	3	234,00	3,1420000	0,0000000
				ΣR_1
				10213,285500
R ₂	1	1407,00	5,0637000	0
				20426,5700000
	2	16,00	5,4700000	0
	3	13,00	0,0000000	0,0000000
				ΣR_2
				10213,2900000
R ₃	1	50,00	3,2200000	0
				ΣR_3
				10213,2900000
R ₄	1	1,00	0,9200000	0
				ΣR_4

Tierra

series	Nº	A	B	C
L ₀	1	175347046	0,0000000	0,0000000
	2	3341656	4,6692568	6283,0758500
	3	34894	4,6261000	12566,1517000
	4	3497	2,7441000	5753,3849000
	5	3418	2,8289000	3,5231000
	6	3136	3,6277000	77713,7715000
	7	2676	4,4181000	7860,4194000
	8	2343	6,1352000	3930,2097000
	9	1324	0,7425000	11506,7698000
	10	1273	2,0371000	529,6910000
	11	1199	1,1096000	1577,3435000
	12	990	5,2330000	5884,9270000
	13	902	2,0450000	26,2980000
	14	857	3,5080000	398,1490000
	15	780	1,1790000	5223,6940000
	16	753	2,5330000	5507,5530000
	17	505	4,5830000	18849,2280000
	18	492	4,2050000	775,5230000
	19	357	2,9200000	0,0670000
	20	317	5,8490000	11790,6290000
	21	284	1,8990000	796,2980000
	22	271	0,3150000	10977,0790000
	23	243	0,3450000	5486,7780000
	24	206	4,8060000	2544,3140000
	25	205	1,8690000	5573,1430000
	26	202	2,4580000	6069,7770000
	27	156	0,8330000	213,2990000
	28	132	3,4110000	2942,4630000
	29	126	1,0830000	20,7750000
	30	115	0,6450000	0,9800000
	31	103	0,6360000	4694,0030000
	32	102	0,9760000	15720,8390000
	33	102	4,2670000	7,1140000
	34	99	6,2100000	2146,1700000
	35	98	0,6800000	155,4200000

36	86	5,9800000	161000,6900000
37	85	1,3000000	6275,9600000
38	85	3,6700000	71430,7000000
39	80	1,8100000	17260,1500000
40	79	3,0400000	12036,4600000
41	75	1,7600000	5088,6300000
42	74	3,5000000	3154,6900000
43	74	4,6800000	801,8200000
44	70	0,8300000	9437,7600000
45	62	3,9800000	8827,3900000
46	61	1,8200000	7084,9000000
47	57	2,7800000	6286,6000000
48	56	4,3900000	14143,5000000
49	56	3,4700000	6279,5500000
50	52	0,1900000	12139,5500000
51	52	1,3300000	1748,0200000
52	51	0,2800000	5856,4800000
53	49	0,4900000	1194,4500000
54	41	5,3700000	8429,2400000
55	41	2,4000000	19651,0500000
56	39	6,1700000	10447,3900000
57	37	6,0400000	10213,2900000
58	37	2,5700000	1059,3800000
59	36	1,7100000	2352,8700000
60	36	1,7800000	6812,7700000
61	33	0,5900000	17789,8500000
62	30	0,4400000	83996,8500000
63	30	2,7400000	1349,8700000
64	25	3,1600000	4690,4800000

ΣL_0

L_1	1	6,28332E+11	0,0000000	0,0000000
	2	206059	2,6782350	6283,0758500
	3	4303	2,6351000	12566,1517000
	4	425	1,5900000	3,5230000
	5	119	5,7960000	26,2980000
	6	109	2,9660000	1577,3440000
	7	93	2,5900000	18849,2300000
	8	72	1,1400000	529,6900000

9	68	1,8700000	398,1500000
10	67	4,4100000	5507,5500000
11	59	2,8900000	5223,6900000
12	56	2,1700000	155,4200000
13	45	0,4000000	796,3000000
14	36	0,4700000	775,5200000
15	29	2,6500000	7,1100000
16	21	5,3400000	0,9800000
17	19	1,8500000	5486,7800000
18	19	4,9700000	213,3000000
19	17	2,9900000	6275,9600000
20	16	0,0300000	2544,3100000
21	16	1,4300000	2146,1700000
22	15	1,2100000	10977,0800000
23	12	2,8300000	1748,0200000
24	12	3,2600000	5088,6300000
25	12	5,2700000	1194,4500000
26	12	2,0800000	4694,0000000
27	11	0,7700000	553,5700000
28	10	1,3000000	6286,6000000
29	10	4,2400000	1349,8700000
30	9	2,7000000	242,7300000
31	9	5,6400000	951,7200000
32	8	5,3000000	2352,8700000
33	6	2,6500000	9437,7600000
34	6	4,6700000	4690,4800000

ΣL_1

L_2

1	52919	0,0000000	0,0000000
2	8720	1,0721000	6283,0758000
3	309	0,8670000	12566,1520000
4	27	0,0500000	3,5200000
5	16	5,1900000	26,3000000
6	16	3,6800000	155,4200000
7	10	0,7600000	18849,2300000
8	9	2,0600000	77713,7700000
9	7	0,8300000	775,5200000
10	5	4,6600000	1577,3400000
11	4	1,0300000	7,1100000

	12	4	3,4400000	5573,1400000
	13	3	5,1400000	796,3000000
	14	3	6,0500000	5507,5500000
	15	3	1,1900000	242,7300000
	16	3	6,1200000	529,6900000
	17	3	0,3100000	398,1500000
	18	3	2,2800000	553,5700000
	19	2	4,3800000	5223,6900000
	20	2	3,7500000	0,9800000
				ΣL_2
L ₃	1	289	5,8440000	6283,0760000
	2	35	0,0000000	0,0000000
	3	17	5,4900000	12566,1500000
	4	3	5,2000000	155,4200000
	5	1	4,7200000	3,5200000
	6	1	5,3000000	18849,2300000
	7	1	5,9700000	242,7300000
				ΣL_3
L ₄	1	114	3,1420000	0,0000000
	2	8	4,1300000	6283,0800000
	3	1	3,8400000	12566,1500000
				ΣL_4
L ₅	1	1	3,1400000	0,0000000
				ΣL_5
B ₀	1	280	3,1990000	84334,6620000
	2	102	5,4220000	5507,5530000
	3	80	3,8800000	5223,6900000
	4	44	3,7000000	2352,8700000
	5	32	4,0000000	1577,3400000
				ΣB_0
B ₁	1	9	3,9000000	5507,5500000
	2	6	1,7300000	5223,6900000
				ΣB_1
R ₀	1	100013989	0,0000000	0,0000000
	2	1670700	3,0984635	6283,0758500
	3	13956	3,0552500	12566,1517000

4	3084	5,1985000	77713,7715000
5	1628	1,1739000	5753,3849000
6	1576	2,8469000	7860,4194000
7	925	5,4530000	11506,7700000
8	542	4,5640000	3930,2100000
9	472	3,6610000	5884,9270000
10	346	0,9640000	5507,5530000
11	329	5,9000000	5223,6940000
12	307	0,2990000	5573,1430000
13	243	4,2730000	11790,6290000
14	212	5,8470000	1577,3440000
15	186	5,0220000	10977,0790000
16	175	3,0120000	18849,2280000
17	110	5,0550000	5486,7780000
18	98	0,8900000	6069,7800000
19	86	5,6900000	15720,8400000
20	86	1,2700000	161000,6900000
21	65	0,2700000	17260,1500000
22	63	0,9200000	529,6900000
23	57	2,0100000	83996,8500000
24	56	5,2400000	71430,7000000
25	49	3,2500000	2544,3100000
26	47	2,5800000	775,5200000
27	45	5,5400000	9437,7600000
28	43	6,0100000	6275,9600000
29	39	5,3600000	4694,0000000
30	38	2,3900000	8827,3900000
31	37	0,8300000	19651,0500000
32	37	4,9000000	12139,5500000
33	36	1,6700000	12036,4600000
34	35	1,8400000	2942,4600000
35	33	0,2400000	7084,9000000
36	32	0,1800000	5088,6300000
37	32	1,7800000	398,1500000
38	28	1,2100000	6286,6000000
39	28	1,9000000	6279,5500000
40	26	4,5900000	10447,3900000

ΣR_0

R ₁	1	103019	1,1074900	6283,0758500
	2	1721	1,0644000	12566,1517000
	3	702	3,1420000	0,0000000
	4	32	1,0200000	18849,2300000
	5	31	2,8400000	5507,5500000
	6	25	1,3200000	5223,6900000
	7	18	1,4200000	1577,3400000
	8	10	5,9100000	10977,0800000
	9	9	1,4200000	6275,9600000
	10	9	0,2700000	5486,7800000

ΣR₁

R ₂	1	4359	5,7846000	6283,0758000
	2	124	5,5790000	12566,1520000
	3	12	3,1400000	0,0000000
	4	9	3,6300000	77713,7700000
	5	6	1,8700000	5573,1400000
	6	3	5,4700000	18849,2300000

ΣR₂

R ₃	1	145	4,2730000	6283,0760000
	2	7	3,9200000	12566,1500000

ΣR₃

R ₄	1	4	2,5600000	6283,0800000
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ΣR₄

Marte

series	Nº	A	B	C
L ₀	1	620347712	0,0000000	0,0000000
	2	18656368	5,0503710	3340,6124267
	3	1108217	5,4009984	6681,2248534
	4	91798	5,7547900	10021,8372800
	5	27745	5,9705000	3,5231200
	6	12316	0,8495600	2810,9214600
	7	10610	2,9395900	2281,2305000
	8	8927	4,1570000	0,0173000
	9	8716	6,1101000	13362,4497000
	10	7775	3,3397000	5621,8429000
	11	6798	0,3646000	398,1490000
	12	4161	0,2281000	2942,4634000
	13	3575	1,6619000	2544,3144000
	14	3075	0,8570000	191,4483000
	15	2938	6,0789000	0,0673000
	16	2628	0,6481000	3337,0893000
	17	2580	0,0300000	3344,1355000
	18	2389	5,0390000	796,2980000
	19	1799	0,6563000	529,6910000
	20	1546	2,9158000	1751,5395000
	21	1528	1,1498000	6151,5339000
	22	1286	3,0680000	2146,1654000
	23	1264	3,6228000	5092,1520000
	24	1025	3,6933000	8962,4553000
	25	892	0,1830000	16703,0620000
	26	859	2,4010000	2914,0140000
	27	833	4,4950000	3340,6300000
	28	833	2,4640000	3340,5950000
	29	749	3,8220000	155,4200000
	30	724	0,6750000	3738,7610000
	31	713	3,6630000	1059,3820000
	32	655	0,4890000	3127,3130000
	33	636	2,9220000	8432,7640000
	34	553	4,4750000	1748,0160000
	35	550	3,8100000	0,9800000

36	472	3,6250000	1194,4470000
37	426	0,5540000	6283,0760000
38	415	0,4970000	213,2990000
39	312	0,9990000	6677,7020000
40	307	0,3810000	6684,7480000
41	302	4,4860000	3532,0610000
42	299	2,7830000	6254,6270000
43	293	4,2210000	20,7750000
44	284	5,7690000	3149,1640000
45	281	5,8820000	1349,8670000
46	274	0,5420000	3340,5450000
47	274	0,1340000	3340,6800000
48	239	5,3720000	4136,9100000
49	236	5,7550000	3333,4990000
50	231	1,2820000	3870,3030000
51	221	3,5050000	382,8970000
52	204	2,8210000	1221,8490000
53	193	3,3570000	3,5900000
54	189	1,4910000	9492,1460000
55	179	1,0060000	951,7180000
56	174	2,4140000	553,5690000
57	172	0,4390000	5486,7780000
58	160	3,9490000	4562,4610000
59	144	1,4190000	135,0650000
60	140	3,3260000	2700,7150000
61	138	4,3010000	7,1140000
62	131	4,0450000	12303,0680000
63	128	2,2080000	1592,5960000
64	128	1,8070000	5088,6290000
65	117	3,1280000	7903,0730000
66	113	3,7010000	1589,0730000
67	110	1,0520000	242,7290000
68	105	0,7850000	8827,3900000
69	100	3,2430000	11773,3770000

ΣL_0

L_1

1	334085627474,00	0,0000000	0,0000000
2	1458227	3,6042605	3340,6124267
3	164901	3,9263130	6681,2248530

4	19963	4,2659400	10021,8372800
5	3452	4,7321000	3,5231000
6	2485	4,6128000	13362,4497000
7	842	4,4590000	2281,2300000
8	538	5,0160000	398,1490000
9	521	4,9940000	3344,1360000
10	433	2,5610000	191,4480000
11	430	5,3160000	155,4200000
12	382	3,5390000	796,2980000
13	314	4,9630000	16703,0620000
14	283	3,1600000	2544,3140000
15	206	4,5690000	2146,1650000
16	169	1,3290000	3337,0890000
17	158	4,1850000	1751,5400000
18	134	2,2330000	0,9800000
19	134	5,9740000	1748,0160000
20	118	6,0240000	6151,5340000
21	117	2,2130000	1059,3820000
22	114	2,1290000	1194,4470000
23	114	5,4280000	3738,7610000
24	91	1,1000000	1349,8700000
25	85	3,9100000	553,5700000
26	83	5,3000000	6684,7500000
27	81	4,4300000	529,6900000
28	80	2,2500000	8962,4600000
29	73	2,5000000	951,7200000
30	73	5,8400000	242 ,7300000
31	71	3,8600000	2914,0100000
32	68	5,0200000	382,9000000
33	65	1,0200000	3340,6000000
34	65	3,0500000	3340,6300000
35	62	4,1500000	3149,1600000
36	57	3,8900000	4136,9100000
37	48	4,8700000	213,3000000
38	48	1,1800000	3333,5000000
39	47	1,3100000	3185,1900000
40	41	0,7100000	1592,6000000
41	40	2,7300000	7,1100000

	42	40	5,3200000	20043,6700000
	43	33	5,4100000	6283,0800000
	44	28	0,0500000	9492,1500000
	45	27	3,8900000	1221,8500000
	46	27	5,1100000	2700,7200000
				ΣL_1
L_2	1	58016	2,0497900	3340,6124300
	2	54188	0,0000000	0,0000000
	3	13908	2,4574200	6681,2248500
	4	2465	2,8000000	10021,8373000
	5	398	3,1410000	13362,4500000
	6	222	3,1940000	3,5230000
	7	121	0,5430000	155,4200000
	8	62	3,4900000	16703,0600000
	9	54	3,5400000	3344,1400000
	10	34	6,0000000	2281,2300000
	11	32	4,1400000	191,4500000
	12	30	2,0000000	796,3000000
	13	23	4,3300000	242,7300000
	14	22	3,4500000	398,1500000
	15	20	5,4200000	553,5700000
	16	16	0,6600000	0,9800000
	17	16	6,1100000	2146,1700000
	18	16	1,2200000	1748,0200000
	19	15	6,1000000	3185,1900000
	20	14	4,0200000	951,7200000
	21	14	2,6200000	1349,8700000
	22	13	0,6000000	1194,4500000
	23	12	3,8600000	6684,7500000
	24	11	4,7200000	2544,3100000
	25	10	0,2500000	382,9000000
	26	9	0,6800000	1059,3800000
	27	9	3,8300000	20043,6700000
	28	9	3,8800000	3738,7600000
	29	8	5,4600000	1751,5400000
	30	7	2,5800000	3149,1600000
	31	7	2,3800000	4136,9100000
	32	6	5,4800000	1592,6000000

	33	6	2,3400000	3097,8800000
				ΣL_2
L ₃	1	1482	0,4443000	3340,6124000
	2	662	0,8850000	6681,2250000
	3	188	1,2880000	10021,8370000
	4	41	1,6500000	13362,4500000
	5	26	0,0000000	0,0000000
	6	23	2,0500000	155,4200000
	7	10	1,5800000	3,5200000
	8	8	2,0000000	16703,0600000
	9	5	2,8200000	242,7300000
	10	4	2,0200000	3344,1400000
	11	3	4,5900000	3185,1900000
	12	3	0,6500000	553,5700000
				ΣL_3
L ₄	1	114	3,1416000	0,0000000
	2	29	5,6400000	6681,2200000
	3	24	5,1400000	3340,6100000
	4	11	6,0300000	10021,8400000
	5	3	0,1300000	13362,4500000
	6	3	3,5600000	155,4200000
	7	1	0,4900000	16703,0600000
	8	1	1,3200000	242,7300000
				ΣL_4
L ₅	1	1	3,1400000	0,0000000
	2	1	4,0400000	6681,2200000
				ΣL_5
B ₀	1	3197135	3,7683204	3340,6124267
	2	298033	4,1061700	6681,2248530
	3	289105	0,0000000	0,0000000
	4	31366	4,4465100	10021,8372800
	5	3484	4,7881000	13362,4497000
	6	443	5,0260000	3344,1360000
	7	443	5,6520000	3337,0890000
	8	399	5,1310000	16703,0620000
	9	293	3,7930000	2281,2300000
	10	182	6,1360000	6151,5340000

	11	163	4,2640000	529,6910000
	12	160	2,2320000	1059,3820000
	13	149	2,1650000	5621,8430000
	14	143	1,1820000	3340,5950000
	15	143	3,2130000	3340,6300000
	16	139	2,4180000	8962,4550000
				ΣB_0
B ₁	1	350069	5,3684780	3340,6124270
	2	14116	3,1415900	0,0000000
	3	9671	5,4788000	6681,2249000
	4	1472	3,2021000	10021,8373000
	5	426	3,4080000	13362,4500000
	6	102	0,7760000	3337,0890000
	7	79	3,7200000	16703,0600000
	8	33	3,4600000	5621,8400000
	9	26	2,4800000	2281,2300000
				ΣB_1
B ₂	1	16727	0,6022100	3340,6124300
	2	4987	3,1416000	0,0000000
	3	302	5,5590000	6681,2250000
	4	26	1,9000000	13362,4500000
	5	21	0,9200000	10021,8400000
	6	12	2,2400000	3337,0900000
	7	8	2,2500000	16703,0600000
				ΣB_2
B ₃	1	607	1,9810000	3340,6120000
	2	43	0,0000000	0,0000000
	3	14	1,8000000	6681,2200000
	4	3	3,4500000	10021,8400000
				ΣB_3
B ₄	1	13	0,0000000	0,0000000
	2	11	3,4600000	3340,6100000
	3	1	0,5000000	6681,2200000
				ΣB_4
R ₀	1	153033488	0,0000000	0,0000000
	2	14184953	3,4797128	3340,6124267
	3	660776	3,8178340	6681,2248530
	4	46179	4,1559500	10021,8372800

5	8110	5,5596000	2810,9215000
6	7485	1,7724000	5621,8429000
7	5523	1,3644000	2281,2305000
8	3825	4,4941000	13362,4497000
9	2484	4,9255000	2942,4634000
10	2307	0,0908000	2544,3144000
11	1999	5,3606000	3337,0893000
12	1960	4,7425000	3344,1355000
13	1167	2,1126000	5092,1520000
14	1103	5,0091000	398,1490000
15	992	5,8390000	6151,5340000
16	899	4,4080000	529,6910000
17	807	2,1020000	1059,3820000
18	798	3,4480000	796,2980000
19	741	1,4990000	2146,1650000
20	726	1,2450000	8432,7640000
21	692	2,1340000	8962,4550000
22	633	0,8940000	3340,5950000
23	633	2,9240000	3340,6300000
24	630	1,2870000	1751,5400000
25	574	0,8290000	2914,0140000
26	526	5,3830000	3738,7610000
27	473	5,1990000	3127,3130000
28	348	4,8320000	16703,0620000
29	284	2,9070000	3532,0610000
30	280	5,2570000	6283,0760000
31	276	1,2180000	6254,6270000
32	275	2,9080000	1748,0160000
33	270	3,7640000	5884,9270000
34	239	2,0370000	1194,4470000
35	234	5,1050000	5486,7780000
36	228	3,2550000	6872,6730000
37	223	4,1990000	3149,1640000
38	219	5,5830000	191,4480000
39	208	5,2550000	3340,5450000
40	208	4,8460000	3340,6800000
41	186	5,6990000	6677,7020000
42	183	5,0810000	6684,7480000

43	179	4,1840000	3333,4990000
44	176	5,9530000	3870,3030000
45	164	3,7990000	4136,9100000

ΣR_0

R_1	1	1107433	2,0325052	3340,6124267
	2	103176	2,3707180	6681,2248530
	3	12877	0,0000000	0,0000000
	4	10816	2,7088800	10021,8372800
	5	1195	3,0470000	13362,4497000
	6	439	2,8880000	2281,2300000
	7	396	3,4230000	3344,1360000
	8	183	1,5840000	2544,3140000
	9	136	3,3850000	16703,0620000
	10	128	6,0430000	3337,0890000
	11	128	0,6300000	1059,3820000
	12	127	1,9540000	796,2980000
	13	118	2,9980000	2146,1650000
	14	88	3,4200000	398,1500000
	15	83	3,8600000	3738,7600000
	16	76	4,4500000	6151,5300000
	17	72	2,7600000	529,6900000
	18	67	2,5500000	1751,5400000
	19	66	4,4100000	1748,0200000
	20	58	0,5400000	1194,4500000
	21	54	0,6800000	8962,4600000
	22	51	3,7300000	6684,7500000
	23	49	5,7300000	3340,6000000
	24	49	1,4800000	3340,6300000
	25	48	2,5800000	3149,1600000
	26	48	2,2900000	2914,0100000
	27	39	2,3200000	4136,9100000

ΣR_1

R_2	1	44242	0,4793100	3340,6124300
	2	8138	0,8700000	6681,2249000
	3	1275	1,2259000	10021,8373000
	4	187	1,5730000	13362,4500000
	5	52	3,1400000	0,0000000
	6	41	1,9700000	3344,1400000

	7	27	1,9200000	16703,0600000
	8	18	4,4300000	2281,2300000
	9	12	4,5300000	3185,1900000
	10	10	5,3900000	1059,3800000
	11	10	0,4200000	796,3000000
				ΣR_2
R_3	1	1113	5,1499000	3340,6124000
	2	424	5,6130000	6681,2250000
	3	100	5,9970000	10021,8370000
	4	20	0,0800000	13362,4500000
	5	5	3,1400000	0,0000000
	6	3	0,4300000	16703,0600000
				ΣR_3
R_4	1	20	3,5800000	3340,6100000
	2	16	4,0500000	6681,2200000
	3	6	4,4600000	10021,8400000
	4	2	4,8400000	13362,4500000
				ΣR_4

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series	Nº	A	B	C
L ₀	1	59954691	0,0000000	0,0000000
	2	9695899	5,0619179	529,6909651
	3	573610	1,4440620	7,1135470
	4	306389	5,4173470	1059,3819300
	5	97178	4,1426500	632,7837400
	6	72903	3,6404300	522,5774200
	7	64264	3,4114500	103,0927700
	8	39806	2,2937700	419,4846400
	9	38858	1,2723200	316,3918700
	10	27965	1,7845500	536,8045100
	11	13590	5,7748100	1589,0729000
	12	8769	3,6300000	949,1756000
	13	8246	3,5823000	206,1855000
	14	7368	5,0810000	735,8765000
	15	6263	0,0250000	213,2991000
	16	6114	4,5132000	1162,4747000
	17	5305	4,1863000	1052,2684000
	18	5305	1,3067000	14,2271000
	19	4905	1,3208000	110,2063000
	20	4647	4,6996000	3,9322000
	21	3045	4,3168000	426,5982000
	22	2610	1,5667000	846,0828000
	23	2028	1,0638000	3,1814000
	24	1921	0,9717000	639,8973000
	25	1765	2,1415000	1066,4955000
	26	1723	3,8804000	1265,5675000
	27	1633	3,5820000	515,4639000
	28	1432	4,2968000	625,6702000
	29	973	4,0980000	95,9790000
	30	884	2,4370000	412,3710000
	31	733	6,0850000	838,9690000
	32	731	3,8060000	1581,9590000
	33	709	1,2930000	742,9900000
	34	692	6,1340000	2118,7640000

35	614	4,1090000	1478,8670000
36	582	4,5400000	309,2780000
37	495	3,7560000	323,5050000
38	441	2,9580000	454,9090000
39	417	1,0360000	2,4480000
40	390	4,8970000	1692,1660000
41	376	4,7030000	1368,6600000
42	341	5,7150000	533,6230000
43	330	4,7400000	0,0480000
44	262	1,8770000	0,9630000
45	261	0,8200000	380,1280000
46	257	3,7240000	199,0720000
47	244	5,2200000	728,7630000
48	235	1,2270000	909,8190000
49	220	1,6510000	543,9180000
50	207	1,8550000	525,7590000
51	202	1,8070000	1375,7740000
52	197	5,2930000	1155,3610000
53	175	3,7300000	942,0620000
54	175	3,2260000	1898,3510000
55	175	5,9100000	956,2890000
56	158	4,3650000	1795,2580000
57	151	3,9060000	74,7820000
58	149	4,3770000	1685,0520000
59	141	3,1360000	491,5580000
60	138	1,3180000	1169,5880000
61	131	4,1690000	1045,1550000
62	117	2,5000000	1596,1860000
63	117	3,3890000	0,5210000
64	106	4,5540000	526,5100000

ΣL_0

5299348075

L_1

1	7	0,0000000	0,0000000
2	489741	4,2206670	529,6909650
3	228919	6,0264750	7,1135470
4	27655	4,5726600	1059,3819300
5	20721	5,4593900	522,5774200
6	12106	0,1698600	536,8045100

7	6068	4,4242000	103,0928000
8	5434	3,9848000	419,4846000
9	4238	5,8901000	14,2271000
10	2212	5,2677000	206,1855000
11	1746	4,9267000	1589,0729000
12	1296	5,5513000	3,1814000
13	1173	5,8565000	1052,2684000
14	1163	0,5145000	3,9322000
15	1099	5,3070000	515,4639000
16	1007	0,4648000	735,8765000
17	1004	3,1504000	426,5982000
18	848	5,7580000	110,2060000
19	827	4,8030000	213,2990000
20	816	0,5860000	1066,4950000
21	725	5,5180000	639,8970000
22	568	5,9890000	625,6700000
23	474	4,1320000	412,3710000
24	413	5,7370000	95,9790000
25	345	4,2420000	632,7840000
26	336	3,7320000	1162,4750000
27	234	4,0350000	949,1760000
28	234	6,2430000	309,2780000
29	199	1,5050000	838,9690000
30	195	2,2190000	323,5050000
31	187	6,0860000	742,9900000
32	184	6,2800000	543,9180000
33	171	5,4170000	199,0720000
34	131	0,6260000	728,7630000
35	115	0,6800000	846,0830000
36	115	5,2860000	2118,7640000
37	108	4,4930000	956,2890000
38	80	5,8200000	1045,1500000
39	72	5,3400000	942,0600000
40	70	5,9700000	532,8700000
41	67	5,7300000	21,3400000
42	66	0,1300000	526,5100000
43	65	6,0900000	1581,9600000
44	59	0,5900000	1155,3600000

45	58	0,9900000	1596,1900000
46	57	5,9700000	1169,5900000
47	57	1,4100000	533,6200000
48	55	5,4300000	10,2900000
49	52	5,7300000	117,3200000
50	52	0,2300000	1368,6600000
51	50	6,0800000	525,7600000
52	47	3,6300000	1478,8700000
53	47	0,5100000	1265,5700000
54	40	4,1600000	1692,1700000
55	34	1,1000000	302,1600000
56	33	5,0400000	220,4100000
57	32	5,3700000	508,3500000
58	29	5,4200000	1272,6800000
59	29	3,3600000	4,6700000
60	29	0,7600000	88,8700000
61	25	1,6100000	831,8600000

ΣL_1

L_2

1	47234	4,3214800	7,1135500
2	38966	0,0000000	0,0000000
3	30629	2,9302100	529,6909700
4	3189	1,0550000	522,5774000
5	2729	4,8455000	536,8045000
6	2723	3,4141000	1059,3819000
7	1721	4,1873000	14,2271000
8	383	5,7680000	419,4850000
9	378	0,7600000	515,4640000
10	367	6,0550000	103,0930000
11	337	3,7860000	3,1810000
12	308	0,6940000	206,1860000
13	218	3,8140000	1589,0730000
14	199	5,3400000	1066,4950000
15	197	2,4840000	3,9320000
16	156	1,4060000	1052,2680000
17	146	3,8140000	639,8970000
18	142	1,6340000	426,5980000
19	130	5,8370000	412,3710000
20	117	1,4140000	625,6700000

21	97	4,0300000	110,2100000
22	91	1,1100000	95,9800000
23	87	2,5200000	632,7800000
24	79	4,6400000	543,9200000
25	72	2,2200000	735,8800000
26	58	0,8300000	199,0700000
27	57	3,1200000	213,3000000
28	49	1,6700000	309,2800000
29	40	4,0200000	21,3400000
30	40	0,6200000	323,5100000
31	36	2,3300000	728,7600000
32	29	3,6100000	10,2900000
33	28	3,2400000	838,9700000
34	26	4,5000000	742,9900000
35	26	2,5100000	1162,4700000
36	25	1,2200000	1045,1500000
37	24	3,0100000	956,2900000
38	19	4,2900000	532,8700000
39	18	0,8100000	508,3500000
40	17	4,2000000	2118,7600000
41	17	1,8300000	526,5100000
42	15	5,8100000	1596,1900000
43	15	0,6800000	942,0600000
44	15	4,0000000	117,3200000
45	14	5,9500000	316,3900000
46	14	1,8000000	302,1600000
47	13	2,5200000	88,8700000
48	13	4,3700000	1169,5900000
49	11	4,4400000	525,7600000
50	10	1,7200000	1581,9600000
51	9	2,1800000	1155,3600000
52	9	3,2900000	220,4100000
53	9	3,3200000	831,8600000
54	8	5,7600000	846,0800000
55	8	2,7100000	533,6200000
56	7	2,1800000	1265,5700000
57	6	0,5000000	949,1800000

ΣL_2

L₃

1	6502	2,5986000	7,1135000
2	1357	1,3464000	529,6910000
3	471	2,4750000	14,2270000
4	417	3,2450000	536,8050000
5	353	2,9740000	522,5770000
6	155	2,0760000	1059,3820000
7	87	2,5100000	515,4600000
8	44	0,0000000	0,0000000
9	34	3,8300000	1066,5000000
10	28	2,4500000	206,1900000
11	24	1,2800000	412,3700000
12	23	2,9800000	543,9200000
13	20	2,1000000	639,9000000
14	20	1,4000000	419,4800000
15	19	1,5900000	103,0900000
16	17	2,3000000	21,3400000
17	17	2,6000000	1589,0700000
18	16	3,1500000	625,6700000
19	16	3,3600000	1052,2700000
20	13	2,7600000	95,9800000
21	13	2,5400000	199,0700000
22	13	6,2700000	426,6000000
23	9	1,7600000	10,2900000
24	9	2,2700000	110,2100000
25	7	3,4300000	309,2800000
26	7	4,0400000	728,7600000
27	6	2,5200000	508,3500000
28	5	2,9100000	1045,1500000
29	5	5,2500000	323,5100000
30	4	4,3000000	88,8700000
31	4	3,5200000	302,1600000
32	4	4,0900000	735,8800000
33	3	1,4300000	956,2900000
34	3	4,3600000	1596,1900000
35	3	1,2500000	213,3000000
36	3	5,0200000	838,9700000
37	3	2,2400000	117,3200000
38	2	2,9000000	742,9900000

	39	2	2,3600000	942,0600000
				ΣL_3
L ₄	1	669	0,8530000	7,1140000
	2	114	3,1420000	0,0000000
	3	100	0,7430000	14,2270000
	4	50	1,6500000	536,8000000
	5	44	5,8200000	529,6900000
	6	32	4,8600000	522,5800000
	7	15	4,2900000	515,4600000
	8	9	0,7100000	1059,3800000
	9	5	1,3000000	543,9200000
	10	4	2,3200000	1066,5000000
	11	4	0,4800000	21,3400000
	12	3	3,0000000	412,3700000
	13	2	0,4000000	639,9000000
	14	2	4,2600000	199,0700000
	15	2	4,9100000	625,6700000
	16	2	4,2600000	206,1900000
	17	1	5,2600000	1052,2700000
	18	1	4,7200000	95,9800000
	19	1	1,2900000	1589,0700000
				ΣL_4
L ₅	1	50	5,2600000	7,1100000
	2	16	5,2500000	14,2300000
	3	4	0,0100000	536,8000000
	4	2	1,1000000	522,5800000
	5	1	3,1400000	0,0000000
				ΣL_5
B ₀	1	2268616	3,5585261	529,6909651
	2	110090	0,0000000	0,0000000
	3	109972	3,9080930	1059,3819300
	4	8101	3,6051000	522,5774000
	5	6438	0,3063000	536,8045000
	6	6044	4,2588000	1589,0729000
	7	1107	2,9853000	1162,4747000
	8	944	1,6750000	426,5980000
	9	942	2,9360000	1052,2680000

10	894	1,7540000	7,1140000
11	836	5,1790000	103,0930000
12	767	2,1550000	632,7840000
13	684	3,6780000	213,2990000
14	629	0,6430000	1066,4950000
15	559	0,0140000	846,0830000
16	532	2,7030000	110,2060000
17	464	1,1730000	949,1760000
18	431	2,6080000	419,4850000
19	351	4,6110000	2118,7640000
20	132	4,7780000	742,9900000
21	123	3,3500000	1692,1660000
22	116	1,3870000	323,5050000
23	115	5,0490000	316,3920000
24	104	3,7010000	515,4640000
25	103	2,3190000	1478,8670000
26	102	3,1530000	1581,9590000

ΣB_0

B_1

1	177352	5,7016650	529,6909650
2	3230	5,7794000	1059,3819000
3	3081	5,4746000	522,5774000
4	2212	4,7348000	536,8045000
5	1694	3,1416000	0,0000000
6	346	4,7460000	1052,2680000
7	234	5,1890000	1066,4950000
8	196	6,1860000	7,1140000
9	150	3,9270000	1589,0730000
10	114	3,4390000	632,7840000
11	97	2,9100000	949,1800000
12	82	5,0800000	1162,4700000
13	77	2,5100000	103,0900000
14	77	0,6100000	419,4800000
15	74	5,5000000	515,4600000
16	61	5,4500000	213,3000000
17	50	3,9500000	735,8800000
18	46	0,5400000	110,2100000
19	45	1,9000000	846,0800000
20	37	4,7000000	543,9200000

	21	36	6,1100000	316,3900000
	22	32	4,9200000	1581,9600000
				ΣB_1
B ₂	1	8094	1,4632000	529,6910000
	2	813	3,1416000	0,0000000
	3	742	0,9570000	522,5770000
	4	399	2,8990000	536,8050000
	5	342	1,4470000	1059,3820000
	6	74	0,4100000	1052,2700000
	7	46	3,4800000	1066,5000000
	8	30	1,9300000	1589,0700000
	9	29	0,9900000	515,4600000
	10	23	4,2700000	7,1100000
	11	14	2,9200000	543,9200000
	12	12	5,2200000	632,7800000
	13	11	4,8800000	949,1800000
	14	6	6,2100000	1045,1500000
				ΣB_2
B ₃	1	252	3,3810000	529,6910000
	2	122	2,7330000	522,5770000
	3	49	1,0400000	536,8000000
	4	11	2,3100000	1052,2700000
	5	8	2,7700000	515,4600000
	6	7	4,2500000	1059,3800000
	7	6	1,7800000	1066,5000000
	8	4	1,1300000	543,9200000
	9	3	3,1400000	0,0000000
				ΣB_3
B ₄	1	15	4,5300000	522,5800000
	2	5	4,4700000	529,6900000
	3	4	5,4400000	536,8000000
	4	3	0,0000000	0,0000000
	5	2	4,5200000	515,4600000
	6	1	4,2000000	1052,2700000
				ΣB_4
B ₅	1	1	0,0900000	522,5800000
				ΣB_5

R_0	1	520887429	0,0000000	0,0000000
	2	25209327	3,4910864	529,6909651
	3	610600	3,8411540	1059,3819300
	4	282029	2,5741990	632,7837390
	5	187647	2,0759040	522,5774180
	6	86793	0,7100100	419,4846400
	7	72063	0,2146600	536,8045100
	8	65517	5,9799600	316,3918700
	9	30135	2,1613200	949,1756100
	10	29135	1,6775900	103,0927700
	11	23947	0,2745800	7,1135500
	12	23453	3,5402300	735,8765100
	13	22284	4,1936300	1589,0729000
	14	13033	2,9604300	1162,4747000
	15	12749	2,7155000	1052,2683800
	16	9703	1,9067000	206,1855000
	17	9161	4,4135000	213,2991000
	18	7895	2,4791000	426,5982000
	19	7058	2,1818000	1265,5675000
	20	6138	6,2642000	846,0828000
	21	5477	5,6573000	639,8973000
	22	4170	2,0161000	515,4639000
	23	4137	2,7222000	625,6702000
	24	3503	0,5653000	1066,4955000
	25	2617	2,0099000	1581,9593000
	26	2500	4,5518000	838,9693000
	27	2128	6,1275000	742,9901000
	28	1912	0,8562000	412,3711000
	29	1611	3,0887000	1368,6603000
	30	1479	2,6803000	1478,8666000
	31	1231	1,8904000	323,5054000
	32	1217	1,8017000	110,2063000
	33	1015	1,3867000	454,9094000
	34	999	2,8720000	309,2780000
	35	961	4,5490000	2118,7640000
	36	886	4,1480000	533,6230000
	37	821	1,5930000	1898,3510000
	38	812	5,9410000	909,8190000

39	777	3,6770000	728,7630000
40	727	3,9880000	1155,3610000
41	655	2,7910000	1685,0520000
42	654	3,3820000	1692,1660000
43	621	4,8230000	956,2890000
44	615	2,2760000	942,0620000
45	562	0,0810000	543,9180000
46	542	0,2840000	525,7590000

ΣR_0

R_1

1	1271802	2,6493751	529,6909651
2	61662	3,0007600	1059,3819300
3	53444	3,8971800	522,5774200
4	41390	0,0000000	0,0000000
5	31185	4,8827700	536,8045100
6	11847	2,4133000	419,4846400
7	9166	4,7598000	7,1135000
8	3404	3,3469000	1589,0729000
9	3203	5,2108000	735,8765000
10	3176	2,7930000	103,0928000
11	2806	3,7422000	515,4639000
12	2677	4,3305000	1052,2684000
13	2600	3,6344000	206,1855000
14	2412	1,4695000	426,5982000
15	2101	3,9276000	639,8973000
16	1646	5,3095000	1066,4955000
17	1641	4,4163000	625,6702000
18	1050	3,1611000	213,2991000
19	1025	2,5543000	412,3711000
20	806	2,6780000	632,7840000
21	741	2,1710000	1162,4750000
22	677	6,2500000	838,9690000
23	567	4,5770000	742,9900000
24	485	2,4690000	949,1760000
25	469	4,7100000	543,9180000
26	445	0,4030000	323,5050000
27	416	5,3680000	728,7630000
28	402	4,6050000	309,2780000
29	347	4,6810000	14,2270000

30	338	3,1680000	956,2890000
31	261	5,3430000	846,0830000
32	247	3,9230000	942,0620000
33	220	4,8420000	1368,6600000
34	203	5,6000000	1155,3610000
35	200	4,4390000	1045,1550000
36	197	3,7060000	2118,7640000
37	196	3,7590000	199,0720000
38	184	4,2650000	95,9790000
39	180	4,4020000	532,8720000
40	170	4,8460000	526,5100000
41	146	6,1300000	533,6230000
42	133	1,3220000	110,2060000
43	132	4,5120000	525,7590000

ΣR_1

R_2

1	79645	1,3586600	529,6909700
2	8252	5,7777000	522,5774000
3	7030	3,2748000	536,8045000
4	5314	1,8384000	1059,3819000
5	1861	2,9768000	7,1135000
6	964	5,4800000	515,4640000
7	836	4,1990000	419,4850000
8	498	3,1420000	0,0000000
9	427	2,2280000	639,8970000
10	406	3,7830000	1066,4950000
11	377	2,2420000	1589,0730000
12	363	5,3680000	206,1860000
13	342	6,0990000	1052,2680000
14	339	6,1270000	625,6700000
15	333	0,0030000	426,5980000
16	280	4,2620000	412,3710000
17	257	0,9630000	632,7840000
18	230	0,7050000	735,8770000
19	201	3,0690000	543,9180000
20	200	4,4290000	103,0930000
21	139	2,9320000	14,2270000
22	114	0,7870000	728,7630000
23	95	1,7000000	838,9700000

24	86	5,1400000	323,5100000
25	83	0,0600000	309,2800000
26	80	2,9800000	742,9900000
27	75	1,6000000	956,2900000
28	70	1,5100000	213,3000000
29	67	5,4700000	199,0700000
30	62	6,1000000	1045,1500000
31	56	0,9600000	1162,4700000
32	52	5,5800000	942,0600000
33	50	2,7200000	532,8700000
34	45	5,5200000	508,3500000
35	44	0,2700000	526,5100000
36	40	5,9500000	95,9800000

ΣR_2

R_3

1	3519	6,0580000	529,6910000
2	1073	1,6732000	536,8045000
3	916	1,4130000	522,5770000
4	342	0,5230000	1059,3820000
5	255	1,1960000	7,1140000
6	222	0,9520000	515,4640000
7	90	3,1400000	0,0000000
8	69	2,2700000	1066,5000000
9	58	1,4100000	543,9200000
10	58	0,5300000	639,9000000
11	51	5,9800000	412,3700000
12	47	1,5800000	625,6700000
13	43	6,1200000	419,4800000
14	37	1,1800000	14,2300000
15	34	1,6700000	1052,2700000
16	34	0,8500000	206,1900000
17	31	1,0400000	1589,0700000
18	30	4,6300000	426,6000000
19	21	2,5000000	728,7600000
20	15	0,8900000	199,0700000
21	14	0,9600000	508,3500000
22	13	1,5000000	1045,1500000
23	12	2,6100000	735,8800000
24	12	3,5600000	323,5100000

25	11	1,7900000	309,2800000
26	11	6,2800000	956,2900000
27	10	6,2600000	103,0900000
28	9	3,4500000	838,9700000

ΣR_3

R_4

1	129	0,0840000	536,8050000
2	113	4,2490000	529,6910000
3	83	3,3000000	522,5800000
4	38	2,7300000	515,4600000
5	27	5,6900000	7,1100000
6	18	5,4000000	1059,3800000
7	13	6,0200000	543,9200000
8	9	0,7700000	1066,5000000
9	8	5,6800000	14,2300000
10	7	1,4300000	412,3700000
11	6	5,1200000	639,9000000
12	5	3,3400000	625,6700000
13	3	3,4000000	1052,2700000
14	3	4,1600000	728,7600000
15	3	2,9000000	426,6000000

ΣR_4

R_5

1	11	4,7500000	536,8000000
2	4	5,9200000	522,5800000
3	2	5,5700000	515,4600000
4	2	4,3000000	543,9200000
5	2	3,6900000	7,1100000
6	2	4,1300000	1059,3800000
7	2	5,4900000	1066,5000000

ΣR_5

Saturno

series	N°	A	B	C
L ₀	1	87401354	0,0000000	0,00000000
	2	11107660	3,9620509	213,29909544
	3	1414151	4,5858152	7,11354700
	4	398379	0,5211200	206,18554800
	5	350769	3,3032990	426,59819100
	6	206816	0,2465840	103,09277400
	7	79271	3,8400700	220,41264000
	8	23990	4,6697700	110,20632000
	9	16574	0,4371900	419,48464000
	10	15820	0,9380900	632,78374000
	11	15054	2,7167000	639,89729000
	12	14907	5,7690300	316,39187000
	13	14610	1,5651900	3,93215000
	14	13160	4,4489100	14,22709000
	15	13005	5,9811900	11,04570000
	16	10725	3,1294000	202,25340000
	17	6126	1,7633000	277,03500000
	18	5863	0,2366000	529,69100000
	19	5228	4,2078000	3,18140000
	20	5020	3,1779000	433,71170000
	21	4593	0,6198000	199,07200000
	22	4006	2,2448000	63,73590000
	23	3874	3,2228000	138,51750000
	24	3269	0,7749000	949,17560000
	25	2954	0,9828000	95,97920000
	26	2461	2,0316000	735,87650000
	27	1758	3,2658000	522,57740000
	28	1640	5,5050000	846,08280000
	29	1581	4,3727000	309,27830000
	30	1391	4,0233000	323,50540000
	31	1124	2,8373000	415,55250000
	32	1087	4,1834000	2,44770000
	33	1017	3,7170000	227,52620000
	34	957	0,5070000	1265,56700000
	35	853	3,4210000	175,16600000

36	849	3,1910000	209,36700000
37	789	5,0070000	0,96300000
38	749	2,1440000	853,19600000
39	744	5,2530000	224,34500000
40	687	1,7470000	1052,26800000
41	654	1,5990000	0,04800000
42	634	2,2990000	412,37100000
43	625	0,9700000	210,11800000
44	580	3,0930000	74,78200000
45	546	2,1270000	350,33200000
46	543	1,5180000	9,56100000
47	530	4,4490000	117,32000000
48	478	2,9650000	137,03300000
49	474	5,4750000	742,99000000
50	452	1,0440000	490,33400000
51	449	1,2900000	127,47200000
52	372	2,2780000	217,23100000
53	355	3,0130000	838,96900000
54	347	1,5390000	340,77100000
55	343	0,2460000	0,52100000
56	330	0,2470000	1581,95900000
57	322	0,9610000	203,73800000
58	322	2,5720000	647,01100000
59	309	3,4950000	216,48000000
60	287	2,3700000	351,81700000
61	278	0,4000000	211,81500000
62	249	1,4700000	1368,66000000
63	227	4,9100000	12,53000000
64	220	4,2040000	200,76900000
65	209	1,3450000	625,67000000
66	208	0,4830000	1162,47500000
67	208	1,2830000	39,35700000
68	204	6,0110000	265,98900000
69	185	3,5030000	149,56300000
70	184	0,9730000	4,19300000
71	182	5,4910000	2,29100000
72	174	1,8630000	0,75100000
73	165	0,4400000	5,41700000

74	149	5,7360000	52,69000000
75	148	1,5350000	5,62900000
76	146	6,2310000	195,14000000
77	140	4,2950000	21,34100000
78	131	4,0680000	10,29500000
79	125	6,2770000	1898,35100000
80	122	1,9760000	4,66600000
81	118	5,3410000	554,07000000
82	117	2,6790000	1155,36100000
83	114	5,5940000	1059,38200000
84	112	1,1050000	191,20800000
85	110	0,1660000	1,48400000
86	109	3,4380000	536,80500000
87	107	4,0120000	956,28900000
88	104	2,1920000	88,86600000
89	103	1,1970000	1685,05200000
90	101	4,9650000	269,92100000

ΣL_0

2135429559

L_1

1	6	0,0000000	0,00000000
2	1296855	1,8282054	213,29909540
3	564348	2,8850010	7,11354700
4	107679	2,2776990	206,18554800
5	98323	1,0807000	426,59819000
6	40255	2,0412800	220,41264000
7	19942	1,2795500	103,09277000
8	10512	2,7488000	14,22709000
9	6939	0,4049000	639,89730000
10	4803	2,4419000	419,48460000
11	4056	2,9217000	110,20630000
12	3769	3,6497000	3,93220000
13	3385	2,4169000	3,18140000
14	3302	1,2626000	433,71170000
15	3071	2,3274000	199,07200000
16	1953	3,5639000	11,04570000
17	1249	2,6280000	95,97920000
18	922	1,9610000	227,52600000
19	706	4,4170000	529,69100000

20	650	6,1740000	202,25300000
21	628	6,1110000	309,27800000
22	487	6,0400000	853,19600000
23	479	4,9880000	522,57700000
24	468	4,6170000	63,73600000
25	417	2,1170000	323,50500000
26	408	1,2990000	209,36700000
27	352	2,3170000	632,78400000
28	344	3,9590000	412,37100000
29	340	3,6340000	316,39200000
30	336	3,7720000	735,87700000
31	332	2,8610000	210,11800000
32	289	2,7330000	117,32000000
33	281	5,7440000	2,44800000
34	266	0,5430000	647,01100000
35	230	1,6440000	216,48000000
36	192	2,9650000	224,34500000
37	173	4,0770000	846,08300000
38	167	2,5970000	21,34100000
39	136	2,2860000	10,29500000
40	131	3,4410000	742,99000000
41	128	4,0950000	217,23100000
42	109	6,1610000	415,55200000
43	98	4,7300000	838,97000000
44	94	3,4800000	1052,27000000
45	92	3,9500000	88,87000000
46	87	1,2200000	440,83000000
47	83	3,1100000	625,67000000
48	78	6,2400000	302,16000000
49	67	0,2900000	4,67000000
50	66	5,6500000	9,56000000
51	62	4,2900000	127,47000000
52	62	1,8300000	195,14000000
53	58	2,4800000	191,96000000
54	57	5,0200000	137,03000000
55	55	0,2800000	74,78000000
56	54	5,1300000	490,33000000
57	51	1,4600000	536,80000000

58	47	1,1800000	149,56000000
59	47	5,1500000	515,46000000
60	46	2,2300000	956,29000000
61	44	2,7100000	5,42000000
62	40	0,4100000	269,92000000
63	40	3,8900000	728,76000000
64	38	0,6500000	422,67000000
65	38	2,5300000	12,53000000
66	37	3,7800000	2,92000000
67	35	6,0800000	5,63000000
68	34	3,2100000	1368,66000000
69	33	4,6400000	277,03000000
70	33	5,4300000	1066,50000000
71	33	0,3000000	351,82000000
72	32	4,3900000	1155,36000000
73	31	2,4300000	52,69000000
74	30	2,8400000	203,00000000
75	30	6,1900000	284,15000000
76	30	3,3900000	1059,38000000
77	29	2,0300000	330,62000000
78	28	2,7400000	265,99000000
79	26	4,5100000	340,77000000

ΣL_1

L_2	1	116441	1,1798790	7,11354700
	2	91921	0,0742500	213,29910000
	3	90592	0,0000000	0,00000000
	4	15277	4,0649200	206,18555000
	5	10631	0,2577800	220,41264000
	6	10605	5,4096400	426,59819000
	7	4265	1,0460000	14,22710000
	8	1216	2,9186000	103,09280000
	9	1165	4,6094000	639,89730000
	10	1082	5,6913000	433,71170000
	11	1045	4,0421000	199,07200000
	12	1020	0,6337000	3,18140000
	13	634	4,3880000	419,48500000
	14	549	5,5730000	3,93200000
	15	457	1,2680000	110,20600000

16	425	0,2090000	227,52600000
17	274	4,2880000	95,97900000
18	162	1,3810000	11,04600000
19	129	1,5660000	309,27800000
20	117	3,8810000	853,19600000
21	105	4,9000000	647,01100000
22	101	0,8930000	21,34100000
23	96	2,9100000	316,39000000
24	95	5,6300000	412,37000000
25	85	5,7300000	209,37000000
26	83	6,0500000	216,48000000
27	82	1,0200000	117,32000000
28	75	4,7600000	210,12000000
29	67	0,4600000	522,58000000
30	66	0,4800000	10,29000000
31	64	0,3500000	323,51000000
32	61	4,8800000	632,78000000
33	53	2,7500000	529,69000000
34	46	5,6900000	440,83000000
35	45	1,6700000	202,25000000
36	42	5,7100000	88,87000000
37	32	0,0700000	63,74000000
38	32	1,6700000	302,16000000
39	31	4,1600000	191,96000000
40	27	0,8300000	224,34000000
41	25	5,6600000	735,88000000
42	20	5,9400000	217,23000000
43	18	4,9000000	625,67000000
44	17	1,6300000	742,99000000
45	16	0,5800000	515,46000000
46	14	0,2100000	838,97000000
47	14	3,7600000	195,14000000
48	12	4,7200000	203,00000000
49	12	0,1300000	234,64000000
50	12	3,1200000	846,08000000
51	11	5,9200000	536,80000000
52	11	5,6000000	728,76000000
53	11	3,2000000	1066,50000000

54	10	4,9900000	422,67000000
55	10	0,2600000	330,62000000
56	10	4,1500000	860,31000000
57	9	0,4600000	956,29000000
58	8	2,1400000	269,92000000
59	8	5,2500000	429,78000000
60	8	4,0300000	9,56000000
61	7	5,4000000	1052,27000000
62	6	4,4600000	284,15000000
63	6	5,9300000	405,26000000

ΣL_2

L_3	1	16039	5,7394500	7,11355000
	2	4250	4,5854000	213,29910000
	3	1907	4,7608000	220,41260000
	4	1466	5,9133000	206,18550000
	5	1162	5,6197000	14,22710000
	6	1067	3,6082000	426,59820000
	7	239	3,8610000	433,71200000
	8	237	5,7680000	199,07200000
	9	166	5,1160000	3,18100000
	10	151	2,7360000	639,89700000
	11	131	4,7430000	227,52600000
	12	63	0,2300000	419,48000000
	13	62	4,7400000	103,09000000
	14	40	5,4700000	21,34000000
	15	40	5,9600000	95,98000000
	16	39	5,8300000	110,21000000
	17	28	3,0100000	647,01000000
	18	25	0,9900000	3,93000000
	19	19	1,9200000	853,20000000
	20	18	4,9700000	10,29000000
	21	18	1,0300000	412,37000000
	22	18	4,2000000	216,48000000
	23	18	3,3200000	309,28000000
	24	16	3,9000000	440,83000000
	25	16	5,6200000	117,32000000
	26	13	1,1800000	88,87000000
	27	11	5,5800000	11,05000000

28	11	5,9300000	191,96000000
29	10	3,9500000	209,37000000
30	9	3,3900000	302,16000000
31	8	4,8800000	323,51000000
32	7	0,3800000	632,78000000
33	6	2,2500000	522,58000000
34	6	1,0600000	210,12000000
35	5	4,6400000	234,64000000
36	4	3,1400000	0,00000000
37	4	2,3100000	515,46000000
38	3	2,2000000	860,31000000
39	3	0,5900000	529,69000000
40	3	4,9300000	224,34000000
41	3	0,4200000	625,67000000
42	2	4,7700000	330,62000000
43	2	3,3500000	429,78000000
44	2	3,2000000	202,25000000
45	2	1,1900000	1066,50000000
46	2	1,3500000	405,26000000
47	2	4,1600000	223,59000000
48	2	3,0700000	654,12000000

ΣL_3

L_4	1	1662	3,9983000	7,11350000
	2	257	2,9840000	220,41300000
	3	236	3,9020000	14,22700000
	4	149	2,7410000	213,29900000
	5	114	3,1420000	0,00000000
	6	110	1,5150000	206,18600000
	7	68	1,7200000	426,60000000
	8	40	2,0500000	433,71000000
	9	38	1,2400000	199,07000000
	10	31	3,0100000	227,53000000
	11	15	0,8300000	639,90000000
	12	9	3,7100000	21,34000000
	13	6	2,4200000	419,48000000
	14	6	1,1600000	647,01000000
	15	4	1,4500000	95,98000000
	16	4	2,1200000	440,83000000

	17	3	4,0900000	110,21000000
	18	3	2,7700000	412,37000000
	19	3	3,0100000	88,87000000
	20	3	0,0000000	853,20000000
	21	3	0,3900000	103,09000000
	22	2	3,7800000	117,32000000
	23	2	2,8300000	234,64000000
	24	2	5,0800000	309,28000000
	25	2	2,2400000	216,48000000
	26	2	5,1900000	302,16000000
	27	1	1,5500000	191,96000000
				ΣL_4
L_5	1	124	2,2590000	7,11400000
	2	34	2,1600000	14,23000000
	3	28	1,2000000	220,41000000
	4	6	1,2200000	227,53000000
	5	5	0,2400000	433,71000000
	6	4	6,2300000	426,60000000
	7	3	2,9700000	199,07000000
	8	3	4,2900000	206,19000000
	9	2	6,2500000	213,30000000
	10	1	5,2800000	639,90000000
	11	1	0,2400000	440,83000000
	12	1	3,1400000	0,00000000
				ΣL_5
B_0	1	4330678	3,6028443	213,29909540
	2	240348	2,8523850	426,59819100
	3	84746	0,0000000	0,00000000
	4	34116	0,5729700	206,18555000
	5	30863	3,4844200	220,41264000
	6	14734	2,1184700	639,89729000
	7	9917	5,7900000	419,48460000
	8	6994	4,7360000	7,11350000
	9	4808	5,4331000	316,39190000
	10	4788	4,9651000	110,20630000
	11	3432	2,7326000	433,71170000
	12	1506	6,0130000	103,09280000
	13	1060	5,6310000	529,69100000

14	969	5,2040000	632,78400000
15	942	1,3960000	853,19600000
16	708	3,8030000	323,50500000
17	552	5,1310000	202,25300000
18	400	3,3590000	227,52600000
19	319	3,6260000	209,36700000
20	316	1,9970000	647,01100000
21	314	0,4650000	217,23100000
22	284	4,8860000	224,34500000
23	236	2,1390000	11,04600000
24	215	5,9500000	846,08300000
25	209	2,1200000	415,55200000
26	207	0,7300000	199,07200000
27	179	2,9540000	63,73600000
28	141	0,6440000	490,33400000
29	139	4,5950000	14,22700000
30	139	1,9980000	735,87700000
31	135	5,2450000	742,99000000
32	122	3,1150000	522,57700000
33	116	3,1090000	216,48000000
34	114	0,9630000	210,11800000

ΣB_0

B_1	1	397555	5,3329000	213,29909500
	2	49479	3,1415900	0,00000000
	3	18572	6,0991900	426,59819000
	4	14801	2,3058600	206,18555000
	5	9644	1,6967000	220,41260000
	6	3757	1,2543000	419,48460000
	7	2717	5,9117000	639,89730000
	8	1455	0,8516000	433,71170000
	9	1291	2,9177000	7,11350000
	10	853	0,4360000	316,39200000
	11	298	0,9190000	632,78400000
	12	292	5,3160000	853,19600000
	13	284	1,6190000	227,52600000
	14	275	3,8890000	103,09300000
	15	172	0,0520000	647,01100000
	16	166	2,4440000	199,07200000

17	158	5,2090000	110,20600000
18	128	1,2070000	529,69100000
19	110	2,4570000	217,23100000
20	82	2,7600000	210,12000000
21	81	2,8600000	14,23000000
22	69	1,6600000	202,25000000
23	65	1,2600000	216,48000000
24	61	1,2500000	209,37000000
25	59	1,8200000	323,51000000
26	46	0,8200000	440,83000000
27	36	1,8200000	224,34000000
28	34	2,8400000	117,32000000
29	33	1,3100000	412,37000000
30	32	1,1900000	846,08000000
31	27	4,6500000	1066,50000000
32	27	4,4400000	11,05000000

ΣB_1

B_2	1	20630	0,5048200	213,29910000
	2	3720	3,9983000	206,18550000
	3	1627	6,1819000	220,41260000
	4	1346	0,0000000	0,00000000
	5	706	3,0390000	419,48500000
	6	365	5,0990000	426,59800000
	7	330	5,2790000	433,71200000
	8	219	3,8280000	639,89700000
	9	139	1,0430000	7,11400000
	10	104	6,1570000	227,52600000
	11	93	1,9800000	316,39000000
	12	71	4,1500000	199,07000000
	13	52	2,8800000	632,78000000
	14	49	4,4300000	647,01000000
	15	41	3,1600000	853,20000000
	16	29	4,5300000	210,12000000
	17	24	1,1200000	14,23000000
	18	21	4,3500000	217,23000000
	19	20	5,3100000	440,83000000
	20	18	0,8500000	110,21000000
	21	17	5,6800000	216,48000000

	22	16	4,2600000	103,09000000
	23	14	3,0000000	412,37000000
	24	12	2,5300000	529,69000000
	25	8	3,3200000	202,25000000
	26	7	5,5600000	209,37000000
	27	7	0,2900000	323,51000000
	28	6	1,1600000	117,32000000
	29	6	3,6100000	860,31000000
				ΣB_2
B ₃	1	666	1,9900000	213,29900000
	2	632	5,6980000	206,18600000
	3	398	0,0000000	0,00000000
	4	188	4,3380000	220,41300000
	5	92	4,8400000	419,48000000
	6	52	3,4200000	433,71000000
	7	42	2,3800000	426,60000000
	8	26	4,4000000	227,53000000
	9	21	5,8500000	199,07000000
	10	18	1,9900000	639,90000000
	11	11	5,3700000	7,11000000
	12	10	2,5500000	647,01000000
	13	7	3,4600000	316,39000000
	14	6	4,8000000	632,78000000
	15	6	0,0200000	210,12000000
	16	6	3,5200000	440,83000000
	17	5	5,6400000	14,23000000
	18	5	1,2200000	853,20000000
	19	4	4,7100000	412,37000000
	20	3	0,6300000	103,09000000
	21	2	3,7200000	216,48000000
				ΣB_3
B ₄	1	80	1,1200000	206,19000000
	2	32	3,1200000	213,30000000
	3	17	2,4800000	220,41000000
	4	12	3,1400000	0,00000000
	5	9	0,3800000	419,48000000
	6	6	1,5600000	433,71000000
	7	5	2,6300000	227,53000000

	8	5	1,2800000	199,07000000
	9	1	1,4300000	426,60000000
	10	1	0,6700000	647,01000000
	11	1	1,7200000	440,83000000
	12	1	6,1800000	639,90000000
				ΣB_4
B ₅	1	8	2,8200000	206,19000000
	2	1	0,5100000	220,41000000
				ΣB_5
R ₀	1	955758136	0,0000000	0,00000000
	2	52921382	2,3922622	213,29909544
	3	1873680	5,2354961	206,18554840
	4	1464664	1,6476305	426,59819090
	5	821891	5,9352000	316,39187000
	6	547507	5,0153260	103,09277400
	7	371684	2,2711480	220,41264200
	8	361778	3,1390430	7,11354700
	9	140618	5,7040670	632,78373900
	10	108975	3,2931360	110,20632100
	11	69007	5,9410000	419,48464000
	12	61053	0,9403800	639,89729000
	13	48913	1,5573300	202,25340000
	14	34144	0,1951900	277,03499000
	15	32402	5,4708500	949,17561000
	16	20937	0,4634900	735,87651000
	17	20839	1,5210300	433,71174000
	18	20747	5,3325600	199,07200000
	19	15298	3,0594400	529,69097000
	20	14296	2,6043400	323,50542000
	21	12884	1,6489200	138,51750000
	22	11993	5,9805100	846,08283000
	23	11380	1,7310600	522,57742000
	24	9796	5,2048000	1265,56750000
	25	7753	5,8519000	95,97920000
	26	6771	3,0043000	14,22710000
	27	6466	0,1773000	1052,26840000
	28	5850	1,4552000	415,55250000
	29	5307	0,5974000	63,73590000

30	4696	2,1492000	227,52620000
31	4044	1,6401000	209,36690000
32	3688	0,7802000	412,37110000
33	3461	1,8509000	175,16610000
34	3420	4,9455000	1581,95930000
35	3401	0,5539000	350,33210000
36	3376	3,6953000	224,34480000
37	2976	5,6847000	210,11770000
38	2885	1,3876000	838,96930000
39	2881	0,1796000	853,19640000
40	2508	3,5385000	742,99010000
41	2448	6,1841000	1368,66030000
42	2406	2,9656000	117,31990000
43	2174	0,0151000	340,77090000
44	2024	5,0541000	11,04570000

ΣR_0

R_1	1	6182981	0,2584352	213,29909540
	2	506578	0,7111470	206,18554800
	3	341394	5,7963580	426,59819100
	4	188491	0,4721570	220,41264200
	5	186262	3,1415930	0,00000000
	6	143891	1,4074490	7,11354700
	7	49621	6,0174400	103,09277000
	8	20928	5,0924600	639,89729000
	9	19953	1,1756000	419,48464000
	10	18840	1,6082000	110,20632000
	11	13877	0,7588600	199,07200000
	12	12893	5,9433000	433,71174000
	13	5397	1,2885000	14,22710000
	14	4869	0,8679000	323,50540000
	15	4247	0,3930000	227,52620000
	16	3252	1,2585000	95,97920000
	17	3081	3,4366000	522,57740000
	18	2909	4,6068000	202,25340000
	19	2856	2,1673000	735,87650000
	20	1988	2,4505000	412,37110000
	21	1941	6,0239000	209,36690000
	22	1581	1,2919000	210,11770000

23	1340	4,3080000	853,19640000
24	1316	1,2530000	117,31990000
25	1203	1,8665000	316,39190000
26	1091	0,0753000	216,48050000
27	966	0,4800000	632,78400000
28	954	5,1520000	647,01100000
29	898	0,9830000	529,69100000
30	882	1,8850000	1052,26800000
31	874	1,4020000	224,34500000
32	785	3,0640000	838,96900000
33	740	1,3820000	625,67000000
34	658	4,1440000	309,27800000
35	650	1,7250000	742,99000000
36	613	3,0330000	63,73600000
37	599	2,5490000	217,23100000
38	503	2,1300000	3,93200000

ΣR_1

R_2	1	436902	4,7867170	213,29909500
	2	71923	2,5007000	206,18555000
	3	49767	4,9716800	220,41264000
	4	43221	3,8694000	426,59819000
	5	29646	5,9631000	7,11355000
	6	4721	2,4753000	199,07200000
	7	4142	4,1067000	433,71170000
	8	3789	3,0977000	639,89730000
	9	2964	1,3721000	103,09280000
	10	2556	2,8507000	419,48460000
	11	2327	0,0000000	0,00000000
	12	2208	6,2759000	110,20630000
	13	2188	5,8555000	14,22710000
	14	1957	4,9245000	227,52620000
	15	924	5,4640000	323,50500000
	16	706	2,9710000	95,97900000
	17	546	4,1290000	412,37100000
	18	431	5,1780000	522,57700000
	19	405	4,1730000	209,36700000
	20	391	4,4810000	216,48000000
	21	374	5,8340000	117,32000000

22	361	3,2770000	647,01100000
23	356	3,1920000	210,11800000
24	326	2,2690000	853,19600000
25	207	4,0220000	735,87700000
26	204	0,0880000	202,25300000
27	180	3,5970000	632,78400000
28	178	4,0970000	440,82500000
29	154	3,1350000	625,67000000
30	148	0,1360000	302,16500000
31	133	2,5940000	191,95800000
32	132	5,9330000	309,27800000

ΣR_2

R_3

1	20315	3,0218700	213,29910000
2	8924	3,1914000	220,41260000
3	6909	4,3517000	206,18550000
4	4087	4,2241000	7,11350000
5	3879	2,0106000	426,59820000
6	1071	4,2036000	199,07200000
7	907	2,2830000	433,71200000
8	606	3,1750000	227,52600000
9	597	4,1350000	14,22700000
10	483	1,1730000	639,89700000
11	393	0,0000000	0,00000000
12	229	4,6980000	419,48500000
13	188	4,5900000	110,20600000
14	150	3,2020000	103,09300000
15	121	3,7680000	323,50500000
16	102	4,7100000	95,97900000
17	101	5,8190000	412,37100000
18	93	1,4400000	647,01000000
19	84	2,6300000	216,48000000
20	73	4,1500000	117,32000000
21	62	2,3100000	440,83000000
22	55	0,3100000	853,20000000
23	50	2,3900000	209,37000000
24	45	4,3700000	191,96000000
25	41	0,6900000	522,58000000
26	40	1,8400000	302,16000000

	27	38	5,9400000	88,87000000
	28	32	4,0100000	21,34000000
				ΣR_3
R_4	1	1202	1,4150000	220,41260000
	2	708	1,1620000	213,29900000
	3	516	6,2400000	206,18600000
	4	427	2,4690000	7,11400000
	5	268	0,1870000	426,59800000
	6	170	5,9590000	199,07200000
	7	150	0,4800000	433,71200000
	8	145	1,4420000	227,52600000
	9	121	2,4050000	14,22700000
	10	47	5,5700000	639,90000000
	11	19	5,8600000	647,01000000
	12	17	0,5300000	440,83000000
	13	16	2,9000000	110,21000000
	14	15	0,3000000	419,48000000
	15	14	1,3000000	412,37000000
	16	13	2,0900000	323,51000000
	17	11	0,2200000	95,98000000
	18	11	2,4600000	117,32000000
	19	10	3,1400000	0,00000000
	20	9	1,5600000	88,87000000
	21	9	2,2800000	21,34000000
	22	9	0,6800000	216,48000000
	23	8	1,2700000	234,64000000
				ΣR_4
R_5	1	129	5,9130000	220,41300000
	2	32	0,6900000	7,11000000
	3	27	5,9100000	227,53000000
	4	20	4,9500000	433,71000000
	5	20	0,6700000	14,23000000
	6	14	2,6700000	206,19000000
	7	14	1,4600000	199,07000000
	8	13	4,5900000	426,60000000
	9	7	4,6300000	213,30000000
	10	5	3,6100000	639,90000000
	11	4	4,9000000	440,83000000

12	3	4,0700000	647,01000000
13	3	4,6600000	191,96000000
14	3	0,4900000	323,51000000
15	3	3,1800000	419,48000000
16	2	3,7000000	88,87000000
17	2	3,3200000	95,98000000
18	2	0,5600000	117,32000000

ΣR_5

Urano

series	N°	A	B	C
L ₀	1	548129294,00	0,0000000	0,0000000
	2	9260408,00	0,8910642	74,7815986
	3	1504248,00	3,6271926	1,4844727
	4	365982,00	1,8996220	73,2971260
	5	272328,00	3,3582370	149,5631970
	6	70328,00	5,3925400	63,7359000
	7	68893,00	6,0929200	76,2660700
	8	61999,00	2,2695200	2,9689500
	9	61951,00	2,8509900	11,0457000
	10	26469,00	3,1415200	71,8126500
	11	25711,00	6,1138000	454,9093700
	12	21079,00	4,3605900	148,0787200
	13	17819,00	1,7443700	36,6485600
	14	14613,00	4,7373200	3,9321500
	15	11163,00	5,8268200	224,3448000
	16	10998,00	0,4886500	138,5175000
	17	9527,00	2,9552000	35,1641000
	18	7546,00	5,2363000	109,9457000
	19	4220,00	3,2333000	70,8494000
	20	4052,00	2,2775000	151,0477000
	21	3490,00	5,4831000	146,5943000
	22	3355,00	1,0655000	4,4534000
	23	3144,00	4,7520000	77,7505000
	24	2927,00	4,6290000	9,5612000
	25	2922,00	5,3524000	85,8273000
	26	2273,00	4,3660000	70,3282000
	27	2149,00	0,6075000	38,1330000
	28	2051,00	1,5177000	0,1119000
	29	1992,00	4,9244000	277,0350000
	30	1667,00	3,6274000	380,1278000
	31	1533,00	2,5859000	52,6902000
	32	1376,00	2,0428000	65,2204000
	33	1372,00	4,1964000	111,4302000
	34	1284,00	3,1135000	202,2534000
	35	1282,00	0,5427000	222,8603000

36	1244,00	0,9161000	2,4477000
37	1221,00	0,1990000	108,4612000
38	1151,00	4,1790000	33,6796000
39	1150,00	0,9334000	3,1814000
40	1090,00	1,7750000	12,5302000
41	1072,00	0,2356000	62,2514000
42	946,00	1,1920000	127,4720000
43	708,00	5,1830000	213,2990000
44	653,00	0,9660000	78,7140000
45	628,00	0,1820000	984,6000000
46	607,00	5,4320000	529,6910000
47	559,00	3,3580000	0,5210000
48	524,00	2,0130000	299,1260000
49	483,00	2,1060000	0,9630000
50	471,00	1,4070000	184,7270000
51	467,00	0,4150000	145,1100000
52	434,00	5,5210000	183,2430000
53	405,00	5,9870000	8,0770000
54	399,00	0,3380000	415,5520000
55	396,00	5,8700000	351,8170000
56	379,00	2,3500000	56,6220000
57	310,00	5,8330000	145,6310000
58	300,00	5,6440000	22,0910000
59	294,00	5,8390000	39,6180000
60	252,00	1,6370000	221,3760000
61	249,00	4,7460000	225,8290000
62	239,00	2,3500000	137,0330000
63	224,00	0,5160000	84,3430000
64	223,00	2,8430000	0,2610000
65	220,00	1,9220000	67,6680000
66	217,00	6,1420000	5,9380000
67	216,00	4,7780000	340,7710000
68	208,00	5,5800000	68,8440000
69	202,00	1,2970000	0,0480000
70	199,00	0,9560000	152,5320000
71	194,00	1,8880000	456,3940000
72	193,00	0,9160000	453,4250000
73	187,00	1,3190000	0,1600000

74	182,00	3,5360000	79,2350000
75	173,00	1,5390000	160,6090000
76	172,00	5,6800000	219,8910000
77	170,00	3,6770000	5,4170000
78	169,00	5,8790000	18,1590000
79	165,00	1,4240000	106,9770000
80	163,00	3,0500000	112,9150000
81	158,00	0,7380000	54,1750000
82	147,00	1,2630000	59,8040000
83	143,00	1,3000000	35,4250000
84	139,00	5,3860000	32,1950000
85	139,00	4,2600000	909,8190000
86	124,00	1,3740000	7,1140000
87	110,00	2,0270000	554,0700000
88	109,00	5,7060000	77,9630000
89	104,00	5,0280000	0,7510000
90	104,00	1,4580000	24,3790000
91	103,00	0,6810000	14,9780000

ΣL_0

L_1	1	7502543122,00	0,0000000	0,0000000
	2	154458,00	5,2420170	74,7815990
	3	24456,00	1,7125600	1,4844700
	4	9258,00	0,4284000	11,0457000
	5	8266,00	1,5022000	63,7359000
	6	7842,00	1,3198000	149,5632000
	7	3899,00	0,4648000	3,9322000
	8	2284,00	4,1737000	76,2661000
	9	1927,00	0,5301000	2,9689000
	10	1233,00	1,5863000	70,8494000
	11	791,00	5,4360000	3,1810000
	12	767,00	1,9960000	73,2970000
	13	482,00	2,9840000	85,8270000
	14	450,00	4,1380000	138,5170000
	15	446,00	3,7230000	224,3450000
	16	427,00	4,7310000	71,8130000
	17	354,00	2,5830000	148,0790000
	18	348,00	2,4540000	9,5610000
	19	317,00	5,5790000	52,6900000

20	206,00	2,3630000	2,4480000
21	189,00	4,2020000	56,6220000
22	184,00	0,2840000	151,0480000
23	180,00	5,6840000	12,5300000
24	171,00	3,0010000	78,7140000
25	158,00	2,9090000	0,9630000
26	155,00	5,5910000	4,4530000
27	154,00	4,6520000	35,1640000
28	152,00	2,9420000	77,7510000
29	143,00	2,5900000	62,2510000
30	121,00	4,1480000	127,4720000
31	116,00	3,7320000	65,2200000
32	102,00	4,1880000	145,6310000
33	102,00	6,0340000	0,1120000
34	88,00	3,9900000	18,1600000
35	88,00	6,1600000	202,2500000
36	81,00	2,6400000	22,0900000
37	72,00	6,0500000	70,3300000
38	69,00	4,0500000	77,9600000
39	59,00	3,7000000	67,6700000
40	47,00	3,5400000	351,8200000
41	44,00	5,9100000	7,1100000
42	43,00	5,7200000	5,4200000
43	39,00	4,9200000	222,8600000
44	36,00	5,9000000	33,6800000
45	36,00	3,2900000	8,0800000
46	36,00	3,3300000	71,6000000
47	35,00	5,0800000	38,1300000
48	31,00	5,6200000	984,6000000
49	31,00	5,5000000	59,8000000
50	31,00	5,4600000	160,6100000
51	30,00	1,6600000	447,8000000
52	29,00	1,1500000	462,0200000
53	29,00	4,5200000	84,3400000
54	27,00	5,5400000	131,4000000
55	27,00	6,1500000	299,1300000
56	26,00	4,9900000	137,0300000
57	25,00	5,7400000	380,1300000

				ΣL_1
L_3	1	53033,00	0,0000000	0,0000000
	2	2358,00	2,2601000	74,7816000
	3	769,00	4,5260000	11,0460000
	4	552,00	3,2580000	63,7360000
	5	542,00	2,2760000	3,9320000
	6	529,00	4,9230000	1,4840000
	7	258,00	3,6910000	3,1810000
	8	239,00	5,8580000	149,5630000
	9	182,00	6,2180000	70,8490000
	10	54,00	1,4400000	76,2700000
	11	49,00	6,0300000	56,6200000
	12	45,00	3,9100000	2,4500000
	13	45,00	0,8100000	85,8300000
	14	38,00	1,7800000	52,6900000
	15	37,00	4,4600000	2,9700000
	16	33,00	0,8600000	9,5600000
	17	29,00	5,1000000	73,3000000
	18	24,00	2,1100000	18,1600000
	19	22,00	5,9900000	138,5200000
	20	22,00	4,8200000	78,7100000
	21	21,00	2,4000000	77,9600000
	22	21,00	2,1700000	224,3400000
	23	17,00	2,5400000	145,6300000
	24	17,00	3,4700000	12,5300000
	25	12,00	0,0200000	22,0900000
	26	11,00	0,0800000	127,4700000
	27	10,00	5,1600000	71,6000000
	28	10,00	4,4600000	62,2500000
	29	9,00	4,2600000	7,1100000
	30	8,00	5,5000000	67,6700000
	31	7,00	1,2500000	5,4200000
	32	6,00	3,3600000	447,8000000
	33	6,00	5,4500000	65,2200000
	34	6,00	4,5200000	151,0500000
	35	6,00	5,7300000	462,0200000

				ΣL_2
L_3	1	121,00	0,0240000	74,7820000

	2	68,00	4,1200000	3,9300000
	3	53,00	2,3900000	11,0500000
	4	46,00	0,0000000	0,0000000
	5	45,00	2,0400000	3,1800000
	6	44,00	2,9600000	1,4800000
	7	25,00	4,8900000	63,7400000
	8	21,00	4,5500000	70,8500000
	9	20,00	2,3100000	149,5600000
	10	9,00	1,5800000	56,6200000
	11	4,00	0,2300000	18,1600000
	12	4,00	5,3900000	76,2700000
	13	4,00	0,9500000	77,9600000
	14	3,00	4,9800000	85,8300000
	15	3,00	4,1300000	52,6900000
	16	3,00	0,3700000	78,7100000
	17	2,00	0,8600000	145,6300000
	18	2,00	5,6600000	9,5600000
				ΣL_3
L ₄	1	114,00	3,1420000	0,0000000
	2	6,00	4,5800000	74,7800000
	3	3,00	0,3500000	11,0500000
	4	1,00	3,4200000	56,6200000
				ΣL_4
B ₀	1	1346278,00	2,6187781	74,7815986
	2	62341,00	5,0811100	149,5632000
	3	61601,00	3,1415900	0,0000000
	4	9964,00	1,6160000	76,2661000
	5	9926,00	0,5763000	73,2971000
	6	3259,00	1,2612000	224,3448000
	7	2972,00	2,2437000	1,4845000
	8	2010,00	6,0555000	148,0787000
	9	1522,00	0,2796000	63,7359000
	10	924,00	4,0380000	151,0480000
	11	761,00	6,1400000	71,8130000
	12	522,00	3,3210000	138,5170000
	13	463,00	0,7430000	85,8270000
	14	437,00	3,3810000	529,6910000

15	435,00	0,3410000	77,7510000
16	431,00	3,5540000	213,2990000
17	420,00	5,2130000	11,0460000
18	245,00	0,7880000	2,9690000
19	233,00	2,2570000	222,8600000
20	216,00	1,5910000	38,1330000
21	180,00	3,7250000	299,1260000
22	175,00	1,2360000	146,5940000
23	174,00	1,9370000	380,1280000
24	160,00	5,3360000	111,4300000
25	144,00	5,9620000	35,1640000
26	116,00	5,7390000	70,8490000
27	106,00	0,9410000	70,3280000
28	102,00	2,6190000	78,7140000

ΣB_0

B_1	1	206366,00	4,1239430	74,7815990
	2	8563,00	0,3382000	149,5632000
	3	1726,00	2,1219000	73,2971000
	4	1374,00	0,0000000	0,0000000
	5	1369,00	3,0686000	76,2661000
	6	451,00	3,7770000	1,4840000
	7	400,00	2,8480000	224,3450000
	8	307,00	1,2550000	148,0790000
	9	154,00	3,7860000	63,7360000
	10	112,00	5,5730000	151,0480000
	11	111,00	5,3290000	138,5170000
	12	83,00	3,5900000	71,8100000
	13	56,00	3,4000000	85,8300000
	14	54,00	1,7000000	77,7500000
	15	42,00	1,2100000	11,0500000
	16	41,00	4,4500000	78,7100000
	17	32,00	3,7700000	222,8600000
	18	30,00	2,5600000	2,9700000
	19	27,00	5,3400000	213,3000000
	20	26,00	0,4200000	380,1300000

ΣB_1

B_2	1	9212,00	5,8004000	74,7816000
	2	557,00	0,0000000	0,0000000

	3	286,00	2,1770000	149,5630000
	4	95,00	3,8400000	73,3000000
	5	45,00	4,8800000	76,2700000
	6	20,00	5,4600000	1,4800000
	7	15,00	0,8800000	138,5200000
	8	14,00	2,8500000	148,0800000
	9	14,00	5,0700000	63,7400000
	10	10,00	5,0000000	224,3400000
	11	8,00	6,2700000	78,7100000
				ΣB_2
B ₃	1	268,00	1,2510000	74,7820000
	2	11,00	3,1400000	0,0000000
	3	6,00	4,0100000	149,5600000
	4	3,00	5,7800000	73,3000000
				ΣB_3
B ₄	1	6,00	2,8500000	74,7800000
				ΣB_4
R ₀	1	1921264848,00	0,0000000	0,0000000
	2	88784984,00	5,6037753	74,7815986
	3	3440836,00	0,3283610	73,2971259
	4	2055653,00	1,7829517	149,5631971
	5	649322,00	4,5224730	76,2660710
	6	602248,00	3,8600380	63,7358980
	7	496404,00	1,4013990	454,9093670
	8	338526,00	1,5800270	138,5174970
	9	243508,00	1,5708660	71,8126530
	10	190522,00	1,9980940	1,4844730
	11	161858,00	2,7913790	148,0787240
	12	143706,00	1,3836860	11,0457000
	13	93192,00	0,1743700	36,6485600
	14	89806,00	3,6610500	109,9456900
	15	71424,00	4,2450900	224,3448000
	16	46677,00	1,3997700	35,1640900
	17	39026,00	3,3623500	277,0349900
	18	39010,00	1,6697100	70,8494500
	19	36755,00	3,8864900	146,5942500
	20	30349,00	0,7010000	151,4767000

21	29156,00	3,1805600	77,7505400
22	25786,00	3,7853800	85,8273000
23	25620,00	5,2565600	380,1277700
24	22637,00	0,7251900	529,6909700
25	20473,00	2,7964000	70,3281800
26	20472,00	1,5558900	202,2534000
27	17901,00	0,5545500	2,9689500
28	15503,00	5,3540500	38,1330400
29	14702,00	4,9043400	108,4612200
30	12897,00	2,6215400	111,4301600
31	12328,00	5,9603900	127,4718000
32	11959,00	1,7504400	984,6003300
33	11853,00	0,9934300	52,6902000
34	11696,00	3,2982600	3,9321500
35	11495,00	0,4377400	65,2203700
36	10793,00	1,4210500	213,2991000
37	9111,00	4,9964000	62,2514000
38	8421,00	5,2535000	222,8603000
39	8402,00	5,0388000	415,5525000
40	7449,00	0,7949000	351,8166000
41	7329,00	3,9728000	183,2428000
42	6046,00	5,6796000	78,7138000
43	5524,00	3,1150000	9,5612000
44	5445,00	5,1058000	145,1098000
45	5238,00	2,6296000	33,6796000
46	4079,00	3,2206000	340,7709000
47	3919,00	4,2502000	39,6175000
48	3802,00	6,1099000	184,7273000
49	3781,00	3,4584000	456,3938000
50	3687,00	2,4872000	453,4249000
51	3102,00	4,1403000	219,8914000
52	2963,00	0,8298000	56,6224000
53	2942,00	0,4239000	299,1264000
54	2940,00	2,1464000	137,0330000
55	2938,00	3,6766000	140,0020000
56	2865,00	0,3100000	12,5302000
57	2538,00	4,8546000	131,4039000
58	2364,00	0,4425000	554,0700000

	59	2183,00	2,9404000	305,3462000
				ΣR_0
R_1	1	1479896,00	3,6720571	74,7815986
	2	71212,00	6,2260100	63,7359000
	3	68627,00	6,1341100	149,5632000
	4	24060,00	3,1415900	0,0000000
	5	21468,00	2,6017700	76,2660700
	6	20857,00	5,2462500	11,0457000
	7	11405,00	0,0184800	70,8494500
	8	7497,00	0,4236000	73,2971000
	9	4244,00	1,4169000	85,8273000
	10	3927,00	3,1551000	71,8127000
	11	3578,00	2,3116000	224,3448000
	12	3506,00	2,5835000	138,5175000
	13	3229,00	5,2550000	3,9322000
	14	3060,00	0,1532000	1,4845000
	15	2564,00	0,9808000	148,0787000
	16	2429,00	3,9944000	52,6902000
	17	1645,00	2,6535000	127,4718000
	18	1584,00	1,4305000	78,7138000
	19	1508,00	5,0600000	151,0477000
	20	1490,00	2,6756000	56,6224000
	21	1413,00	4,5746000	202,2534000
	22	1403,00	1,3699000	77,7505000
	23	1228,00	1,0470000	62,2514000
	24	1033,00	0,2646000	131,4039000
	25	992,00	2,1720000	65,2200000
	26	862,00	5,0550000	351,8170000
	27	744,00	3,0760000	35,1640000
	28	687,00	2,4990000	77,9630000
	29	647,00	4,4730000	70,3280000
	30	624,00	0,8630000	9,5610000
	31	604,00	0,9070000	984,6000000
	32	575,00	3,2310000	447,7960000
	33	562,00	2,7180000	462,0230000
	34	530,00	5,9170000	213,2990000
	35	528,00	5,1510000	2,9690000
				ΣR_1

R ₂	1	22440,00	0,6995300	74,7816000
	2	4727,00	1,6990000	63,7359000
	3	1682,00	4,6483000	70,8494000
	4	1650,00	3,0966000	11,0457000
	5	1434,00	3,5212000	149,5632000
	6	770,00	0,0000000	0,0000000
	7	500,00	6,1720000	76,2660000
	8	461,00	0,7670000	3,9320000
	9	390,00	4,4960000	56,6220000
	10	390,00	5,5270000	85,8270000
	11	292,00	0,2040000	52,6900000
	12	287,00	3,5340000	73,2970000
	13	273,00	3,8470000	138,5170000
	14	220,00	1,9640000	131,4040000
	15	216,00	0,8480000	77,9630000
	16	205,00	3,2480000	78,7140000
	17	149,00	4,8980000	127,4720000
	18	129,00	2,0810000	3,1810000

ΣR₂

R ₃	1	1164,00	4,7345000	74,7816000
	2	212,00	3,3430000	63,7360000
	3	196,00	2,9800000	70,8490000
	4	105,00	0,9580000	11,0460000
	5	73,00	1,0000000	149,5600000
	6	72,00	0,0300000	56,6200000
	7	55,00	2,5900000	3,9300000
	8	36,00	5,6500000	77,9600000
	9	34,00	3,8200000	76,2700000
	10	32,00	3,6000000	131,4000000

ΣR₃

R ₄	1	53,00	3,0100000	74,7800000
	2	10,00	1,9100000	56,6200000

ΣR₄

Neptuno

series	Nº	A	B	C
L ₀	1	531188633	0,0000000	0,0000000
	2	1798476	2,9010127	38,1330356
	3	1019728	0,4858092	1,4844727
	4	124532	4,8300810	36,6485630
	5	42064	5,4105500	2,9689500
	6	37715	6,0922200	35,1640900
	7	33785	1,2448900	76,2660700
	8	16483	0,0000800	491,5579300
	9	9199	4,9375000	39,6175000
	10	8994	0,2746000	175,1661000
	11	4216	1,9871000	73,2971000
	12	3365	1,0359000	33,6796000
	13	2285	4,2061000	4,4534000
	14	1434	2,7834000	74,7816000
	15	900	2,0760000	109,9460000
	16	745	3,1900000	71,8130000
	17	506	5,7480000	114,3990000
	18	400	0,3500000	1021,2490000
	19	345	3,4620000	41,1020000
	20	340	3,3040000	77,7510000
	21	323	2,2480000	32,1950000
	22	306	0,4970000	0,5210000
	23	287	4,5050000	0,0480000
	24	282	2,2460000	146,5940000
	25	267	4,8890000	0,9630000
	26	252	5,7820000	388,4650000
	27	245	1,2470000	9,5610000
	28	233	2,5050000	137,0330000
	29	227	1,7970000	453,4250000
	30	170	3,3240000	108,4610000
	31	151	2,1920000	33,9400000
	32	150	2,9970000	5,9380000
	33	148	0,8590000	111,4300000
	34	119	3,6770000	2,4480000
	35	109	2,4160000	183,2430000

	36	103	0,0410000	0,2610000
	37	103	4,4040000	70,3280000
	38	102	5,7050000	0,1120000
				ΣL_0
L_1	1	3837687717	0,0000000	0,0000000
	2	16604	4,8631900	1,4844700
	3	15807	2,2792300	38,1330400
	4	3335	3,6820000	76,2661000
	5	1306	3,6732000	2,9689000
	6	605	1,5050000	35,1640000
	7	179	3,4530000	39,6180000
	8	107	2,4510000	4,4530000
	9	106	2,7550000	33,6800000
	10	73	5,4900000	36,6500000
	11	57	1,8600000	114,4000000
	12	57	5,2200000	0,5200000
	13	35	4,5200000	74,7800000
	14	32	5,9000000	77,7500000
	15	30	3,6700000	388,4700000
	16	29	5,1700000	9,5600000
	17	29	5,1700000	2,4500000
	18	26	5,2500000	168,0500000
				ΣL_1
L_2	1	53893	0,0000000	0,0000000
	2	296	1,8550000	1,4840000
	3	281	1,1910000	38,1330000
	4	270	5,7210000	76,2660000
	5	23	1,2100000	2,9700000
	6	9	4,4300000	35,1600000
	7	7	0,5400000	2,4500000
				ΣL_2
L_3	1	31	0,0000000	0,0000000
	2	15	1,3500000	76,2700000
	3	12	6,0400000	1,4800000
	4	12	6,1100000	38,1300000
				ΣL_3
L_4	1	114	3,1420000	0,0000000
				ΣL_4

B ₀	1	3088623	1,4410437	38,1330356
	2	27780	5,9127200	76,2660700
	3	27624	0,0000000	0,0000000
	4	15448	3,5087700	39,6175100
	5	15355	2,5212400	36,6485600
	6	2000	1,5100000	74,7816000
	7	1968	4,3778000	1,4845000
	8	1015	3,2156000	35,1641000
	9	606	2,8020000	73,2970000
	10	595	2,1290000	41,1020000
	11	589	3,1870000	2,9690000
	12	402	4,1690000	114,3990000
	13	280	1,6820000	77,7510000
	14	262	3,7670000	213,2990000
	15	254	3,2710000	453,4250000
	16	206	4,2570000	529,6910000
	17	140	3,5300000	137,0330000

ΣB₀

B ₁	1	227279	3,8079310	38,1330360
	2	1803	1,9758000	76,2661000
	3	1433	3,1416000	0,0000000
	4	1386	4,8256000	36,6486000
	5	1073	6,0805000	39,6175000
	6	148	3,8580000	74,7820000
	7	136	0,4780000	1,4840000
	8	70	6,1900000	35,1600000
	9	52	5,0500000	73,3000000
	10	43	0,3100000	114,4000000
	11	37	4,8900000	41,1000000
	12	37	5,7600000	2,9700000
	13	26	5,2200000	213,3000000

ΣB₁

B ₂	1	9691	5,5712000	38,1330000
	2	79	3,6300000	76,2700000
	3	72	0,4500000	36,6500000
	4	59	3,1400000	0,0000000
	5	30	1,6100000	39,6200000
	6	6	5,6100000	74,7800000

				ΣB_2
B_3	1	273	1,0170000	38,1330000
	2	2	0,0000000	0,0000000
	3	2	2,3700000	36,6500000
	4	2	5,3300000	76,2700000
				ΣB_3
B_4	1	6	2,6700000	38,1300000
				ΣB_4
R_0	1	3007013206	0,0000000	0,0000000
	2	27062259	1,3299946	38,1330356
	3	1691764	3,2518614	36,6485629
	4	807831	5,1859280	1,4844730
	5	537761	4,5211390	35,1640900
	6	495726	1,5710570	491,5579290
	7	274572	1,8455230	175,1660600
	8	135134	3,3722060	39,6175080
	9	121802	5,7975440	76,2660710
	10	100895	0,3770270	73,2971260
	11	69792	3,7961700	2,9689500
	12	46688	5,7493800	33,6796200
	13	24594	0,5080200	109,9456900
	14	16939	1,5942200	71,8126500
	15	14230	1,0778600	74,7816000
	16	12012	1,9206200	1021,2488900
	17	8395	0,6782000	146,5943000
	18	7572	1,0715000	388,4652000
	19	5721	2,5906000	4,4534000
	20	4840	1,9069000	41,1020000
	21	4483	2,9057000	529,6910000
	22	4421	1,7499000	108,4612000
	23	4354	0,6799000	32,1951000
	24	4270	3,4134000	453,4249000
	25	3381	0,8481000	183,2428000
	26	2881	1,9860000	137,0330000
	27	2879	3,6742000	350,3321000
	28	2636	3,0976000	213,2991000
	29	2530	5,7984000	490,0735000
	30	2523	0,4863000	493,0424000

	31	2306	2,8096000	70,3282000
	32	2087	0,6186000	33,9402000
				ΣR_0
R_1	1	236339	0,7049800	38,1330360
	2	13220	3,3201500	1,4844700
	3	8622	6,2163000	35,1641000
	4	2702	1,8814000	39,6175000
	5	2155	2,0943000	2,9689000
	6	2153	5,1687000	76,2661000
	7	1603	0,0000000	0,0000000
	8	1464	1,1842000	33,6796000
	9	1136	3,9189000	36,6486000
	10	898	5,2410000	388,4650000
	11	790	0,5330000	168,0530000
	12	760	0,0210000	182,2800000
	13	607	1,0770000	1021,2490000
	14	572	3,4010000	484,4440000
	15	561	2,8870000	498,6710000
				ΣR_1
R_2	1	4247	5,8991000	38,1330000
	2	218	0,3460000	1,4840000
	3	163	2,2390000	168,0530000
	4	156	4,5940000	182,2800000
	5	127	2,8480000	35,1640000
				ΣR_2
R_3	1	166	4,5520000	38,1330000
				ΣR_3