

Tábuas das marés de Ubatuba, Santos e Cananéia para os anos de 2026 e 2027

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- **Abstract:** The tide tables of Ubatuba, Santos and Cananéia here presented give predictions of the levels and the times of high and low waters, in these stations, for the years of 2026 and 2027. The predictions of the tidal extremes are based on the Tidal Analysis by the Harmonic Method, considering hourly records of the surface level with the extension of one year; the harmonic constants computed in the analysis are used in hourly predictions, so that interpolations near the extremes of the predicted hourly series give the extreme values of the tables. Meteorological effects, mostly the wind, may cause significant variations of the observed maximum and minimum sea levels relative to the correspondent predicted tidal extreme values, although, in general, they do not affect the respective times.

- **Resumo:** As tábuas das marés de Ubatuba, Santos e Cananéia aqui apresentadas contêm a previsão dos níveis de preamar e baixa mar da maré e seus respectivos instantes de ocorrência, nessas estações, para os anos de 2026 e 2027. As previsões dos extremos de maré são baseadas na Análise de Maré pelo Método Harmônico, considerando registros horários do nível da superfície com a extensão de um ano; as constantes harmônicas determinadas pela análise são utilizadas em previsões horárias, sendo que interpolações próximo aos extremos das séries horárias previstas fornecem os valores extremos das tábuas. Efeitos meteorológicos, notadamente o vento, podem causar significativas variações nos máximos e mínimos de nível do mar observados em relação aos correspondentes níveis extremos de maré previstos, embora, em geral, eles não afetem os instantes de sua ocorrência.

- **Descriptors:** Tide tables, Tidal prediction, High water, Low tide, Extreme values, Southeastern Brazilian coast, Ubatuba, Santos, Cananéia, São Paulo State.

- **Descritores:** Tábuas das marés, Previsão da maré, Preamar, Baixa mar, Valores extremos, Costa Sudeste do Brasil, Ubatuba, Santos, Cananéia, Estado de São Paulo.

Introdução

A presente publicação contém a previsão dos extremos de maré de Ubatuba, Santos e Cananéia, para os anos de 2026 e 2027 (Harari, 2024). Na previsão são fornecidos os níveis máximos e mínimos de maré e seus respectivos instantes de ocorrência, nessas três estações maregráficas, localizadas na Base “Clarimundo de Jesus” (Base Norte do Instituto Oceanográfico da Universidade de São Paulo - IOUSP, em Ubatuba), no Porto de Santos (da Companhia Docas do Estado de São Paulo - CODESP, em Torre Grande) e na Base “Dr. João de Paiva Carvalho” (Base

Sul do IOUSP, em Cananéia). Características dos marégrafos e a análise das respectivas observações de maré são fornecidas em Mesquita & Harari (1983) e em Harari & Camargo (1995).

As previsões apresentadas neste trabalho são baseadas na análise de maré das observações horárias da elevação da superfície nas estações maregráficas de Ubatuba, Santos e Cananéia. Esta análise foi efetuada através do Método Harmônico de Análise de Maré (Franco, 1988), sendo as constantes harmônicas de amplitude e fase das componentes de maré apresentadas em Mesquita & Harari (1983, 2003) e em Harari & Camargo (1995). Com os valores dessas constantes, são efetuadas previsões horárias de maré, através da composição harmônica das componentes estatisticamente selecionadas; além da seleção do método de análise, são consideradas apenas as componentes cuja amplitude é maior ou igual a 0,5 cm. Finalmente, previsões de preamares e baixa mares são realizadas através de interpolações sucessivas próximo aos extremos das séries horárias previstas, considerando intervalos de tempo progressivamente divididos ao meio, a partir do valor inicial de uma hora; essas interpolações são efetuadas segundo a fórmula de interpolação de Newton, do terceiro grau (Franco et al, 1975). Os programas de computador utilizados nos processamentos de dados segundo a metodologia acima citada são apresentados em Franco & Harari (1987).

No cabeçalho das tábuas apresentadas são fornecidos o ano de previsão, o nome de identificação da estação, sua posição geográfica, o fuso horário, a sigla da instituição mantenedora da estação maregráfica, o nível de referência considerado nos cálculos e a carta náutica que melhor representa o local considerado. A disposição dos resultados é similar à utilizada pela Diretoria de Hidrografia e Navegação (DHN) da Marinha do Brasil, na apresentação de suas Tábuas de Marés (DHN, 2001), regularmente disponibilizadas na internet no endereço <https://www.marinha.mil.br/chm/dados-do-segnav-publicacoes/tabuas-das-mares>.

Nas tábuas apresentadas, os instantes de ocorrência dos extremos de maré são relativos à hora legal referida ao fuso horário internacional. As alturas extremas previstas são referidas ao nível de redução adotado para a confecção das respectivas Cartas Náuticas pela Diretoria de Hidrografia e Navegação da Marinha do Brasil.

É necessário frisar que fatores meteorológicos, principalmente o vento, podem causar significativas variações nos máximos e mínimos de nível do mar observados em relação aos correspondentes níveis extremos de maré previstos, embora, em geral, eles não afetem os instantes de sua ocorrência.

Solicita-se aos usuários destas Tábuas de Marés que comuniquem aos autores do trabalho, no Instituto Oceanográfico da USP, quaisquer informações que possam ser úteis para futuras correções e aprimoramentos nas Tábuas. Nos casos de discrepâncias significativas entre as previsões e observações, solicita-se informar as diferenças de nível e de tempo, se possível com um relato das condições meteorológicas reinantes, especialmente a intensidade e a direção do vento.

Após as Tábuas das Marés, é fornecida a tabela dos instantes de ocorrência das fases da Lua, segundo o Tempo Médio de Greenwich (TMG); esta tabela é baseada no cálculo de uma série horária das diferenças de longitude do Sol e da Lua, seguida de interpolações quadráticas para instantes intermediários.

As Tábuas das Marés de Ubatuba, Santos e Cananéia

A posição geográfica da estação maregráfica da Base de Ubatuba é 23°30,0' S - 45°07,3' W e o nível médio considerado na análise é de 0,66 m, conforme apresentado na Carta Náutica n° 1613 da Diretoria de Hidrografia e Navegação da Marinha do Brasil. Na previsão de maré em Ubatuba, foram consideradas 33 componentes de maré, as quais caracterizam uma maré do tipo "desigualdades diurnas", sendo que o estabelecimento do porto é em 02 h 46 min.

As previsões de maré do Porto de Santos são referentes a Torre Grande, localizado em 23°57,0' S - 46°18,5' W, tendo nível médio de 0,77 m, conforme a Carta Náutica n° 1701 da DHN. Foram consideradas 44 componentes harmônicas nas previsões do Porto de Santos, cuja classificação de maré é do tipo "desigualdades diurnas", com estabelecimento do porto em 03 h 01 min.

A posição geográfica da estação maregráfica da Base de Cananéia é 25°01,0' S - 47° 55,5' W e o nível médio considerado na análise é de 0,80 m, segundo a Carta Náutica n° 1703 da DHN. A previsão de maré em Cananéia foi realizada com 43 componentes harmônicas, as quais caracterizam uma maré de "desigualdades diurnas", cujo estabelecimento do porto é em 03 h 13 min.

Estimativas da maré em instantes intermediários entre as ocorrências das preamares e baixa mares previstas na Tábua podem ser obtidas, em primeira aproximação, através de uma interpolação linear, considerando dois extremos consecutivos fornecidos e seus respectivos instantes de ocorrência. Uma aproximação mais precisa desta interpolação considera o caráter senoidal da maré, de modo que, sendo ΔH a variação de nível entre dois extremos consecutivos da maré e sendo ΔT o intervalo de tempo para a ocorrência desta variação, se tem que: em 5% de ΔT a maré varia 0,6% de ΔH ; 12,5% de ΔT corresponde a 3,4% de ΔH ; e assim sucessivamente, conforme apresentado na Tabela 1. Deve-se notar que valores ΔH e ΔT são facilmente obtidos das Tábuas de Marés, e que as porcentagens de ΔH obtidas na Tabela 1 são aditivas após as baixa mares e são subtrativas após as preamares.

Outras informações sobre as marés de Ubatuba, Santos e Cananéia, tais como valores médios mensais, valores extremos mensais etc., podem ser obtidas em Mesquita & Harari (1983) e em Harari & Camargo (1995).

Após as referências bibliográficas, são fornecidas as Tábuas das Marés de Ubatuba, Santos e Cananéia, para os anos de 2026 e 2027, seguidas da Tabela das Fases da Lua desses anos. As tábuas de marés e as informações sobre as fases da lua podem ser encontradas na internet, através dos endereços:

<https://www.io.usp.br/index.php/tabuas-das-mares.html> e
<http://www.labdados.io.usp.br/> .

Tabela 1. Valores da porcentagem de ΔT e correspondente porcentagem de ΔH numa maré senoidal, onde ΔT é o intervalo de tempo que decorre entre dois extremos consecutivos da maré e ΔH é a correspondente variação de nível desses extremos. Os valores percentuais de ΔH são aditivos após as baixamares e subtrativos após as preamares

% de ΔT	% de ΔH	% de ΔT	% de ΔH
0	0		
2,5	0,1	27,5	16,1
5	0,6	30	19,1
7,5	1,2	32,5	22,3
10	2,2	35	25,7
12,5	3,4	37,5	29,3
15	4,9	40	33,1
17,5	6,6	42,5	37,1
20	8,7	45	41,2
22,5	10,9	47,5	45,5
25	13,4	50	50,0

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2026

UBATUBA - BASE NORTE DO IOUSP

2026

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS									
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613									
JANEIRO						FEVEREIRO						MARCO									
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT					
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M		
01	0215	1.1	16	0149	1.0	01	0330	1.2	16	0221	1.2	01	0226	1.2	16	0138	1.1				
	0739	0.4		0754	0.4		0900	0.4		0843	0.3		0804	0.4		0738	0.3				
	1358	0.8		1304	1.0		1347	1.0		1402	1.1		1324	1.0		1315	1.1				
	1943	0.1		1953	0.1		2108	-0.1		2058	-0.1		2008	-0.1		1951	0.0				
02	0306	1.2	17	0209	1.1	02	0353	1.1	17	0238	1.2	02	0253	1.1	17	0153	1.2				
	0834	0.4		0832	0.4		0936	0.4		0911	0.3		0834	0.3		0806	0.3				
	1334	0.9		1339	1.0		1409	1.1		1432	1.2		1326	1.1		1343	1.2				
	2036	0.0		2036	0.0		2154	-0.1		2139	-0.1		2053	-0.1		2032	-0.1				
03	0356	1.2	18	0230	1.1	03	0326	1.0	18	0300	1.2	03	0243	1.1	18	0211	1.2				
	0917	0.4		0906	0.4		1002	0.4		0943	0.3		0900	0.3		0839	0.2				
	1338	0.9		1411	1.1		1445	1.2		1500	1.2		1354	1.2		1408	1.3				
	2121	-0.1		2117	0.0		2236	0.0		2217	-0.1		2132	0.0		2109	-0.1				
04	0439	1.1	19	0256	1.2	04	0321	1.0	19	0323	1.2	04	0228	1.1	19	0228	1.2				
	0958	0.4		0941	0.4		1030	0.4		1013	0.3		0928	0.3		0909	0.2				
	1411	1.0		1449	1.1		1517	1.2		1524	1.2		1423	1.3		1432	1.3				
	2208	-0.1		2200	0.0		2313	0.1		2256	0.0		2206	0.0		2153	-0.1				
05	0508	1.1	20	0324	1.2	05	0349	1.0	20	0351	1.1	05	0251	1.1	20	0249	1.1				
	1038	0.5		1011	0.4		1056	0.4		1047	0.3		0956	0.3		0947	0.2				
	1453	1.1		1519	1.1		1556	1.2		1553	1.2		1458	1.3		1458	1.3				
	2256	0.0		2243	0.0		2354	0.2		2338	0.1		2247	0.1		2232	0.1				
06	0400	1.0	21	0354	1.1	06	0415	1.0	21	0411	1.0	06	0315	1.1	21	0309	1.1				
	1106	0.5		1045	0.4		1128	0.4		1124	0.3		1026	0.3		1023	0.2				
	1532	1.1		1553	1.1		1634	1.1		1615	1.1		1534	1.2		1523	1.2				
	2345	0.1		2323	0.0								2315	0.3		2309	0.2				
07	0417	0.9	22	0424	1.1	07	0032	0.4	22	0017	0.3	07	0349	1.0	22	0334	1.0				
	1139	0.5		1117	0.4		0453	0.9		0439	0.9		1100	0.3		1102	0.3				
	1611	1.1		1619	1.1		1208	0.4		1208	0.4		1606	1.1		1556	1.1				
							1709	1.0		1653	1.0		2349	0.4		2356	0.4				
08	0028	0.2	23	0004	0.1	08	0104	0.5	23	0106	0.4	08	0413	1.0	23	0358	0.9				
	0453	0.9		0456	1.0		0521	0.9		0500	0.9		1145	0.3		1154	0.3				
	1208	0.5		1156	0.4		1302	0.4		1306	0.4		1645	1.0		1626	1.0				
	1658	1.1		1649	1.1		1753	0.9		1723	0.9					2049	0.8				
							2209	0.6		2011	0.7										
										2221	0.8										
09	0111	0.3	24	0051	0.2	09	0153	0.6	24	0208	0.6	09	0015	0.5	24	0053	0.6				
	0524	0.8		0523	0.9		0554	0.8		0521	0.8		0441	0.9		0415	0.9				
	1251	0.5		1241	0.4		1408	0.4		0854	0.5		1239	0.4		1300	0.4				
	1745	1.0		1715	1.0		1847	0.8		1100	0.6		1717	0.9		1706	0.8				
							2151	0.7		1424	0.4		2121	0.7		1923	0.7				
										1811	0.7		2247	0.7		2230	0.9				
										2008	0.7										
										2343	0.9										
10	0200	0.4	25	0141	0.3	10	0000	0.7	25	0341	0.7	10	0058	0.6	25	0200	0.7				
	0606	0.8		0556	0.8		0253	0.6		0543	0.7		0454	0.9		0439	0.8				
	1345	0.5		1338	0.5		0619	0.8		0900	0.5		1343	0.4		0828	0.5				
	1838	0.9		1758	0.9		1523	0.4		1200	0.7		1804	0.8		1056	0.6				
										1600	0.4		2056	0.7		1421	0.4				
													2338	0.8		1804	0.7				
																1936	0.6				
																2330	1.0				
11	0256	0.5	26	0238	0.4	11	0038	0.8	26	0036	1.1	11	0200	0.7	26	0843	0.5				
	0700	0.8		0624	0.8		0411	0.7		0902	0.6		0454	0.8		1145	0.7				
	1453	0.5		0902	0.7		1147	0.7		1241	0.8		1454	0.4		1558	0.4				
	1953	0.8		1053	0.7		1643	0.4		1732	0.3										
	2256	0.7		1445	0.5																
	2356	0.7		1853	0.8																
				2047	0.7																
				2330	0.9																
12	0358	0.6	27	0351	0.5	12	0100	0.9	27	0115	1.2	12	0004	0.9	27	0013	1.1				
	0817	0.8		0704	0.7		0704	0.6		0728	0.5		0323	0.7		0826	0.6				
	1604	0.4		0909	0.6		1215	0.8		1308	0.8		0453	0.7		1215	0.8				
				1158	0.7		1751	0.3		1838	0.1		0815	0.6		1717	0.3				
				1604	0.4								1134	0.7							

									1606	0.4							
13	0041	0.8	28	0038	1.0	13	0126	1.0	28	0156	1.2	13	0034	0.9	28	0056	1.1
	0508	0.6		0519	0.5		0724	0.5		0743	0.5		0749	0.6		0654	0.5
	1034	0.8		0813	0.6		1239	0.9		1328	0.9		1202	0.8		1243	0.9
	1715	0.3		1251	0.8		1845	0.2		1924	0.0		1719	0.3		1815	0.1
				1732	0.3												
14	0104	0.9	29	0128	1.1	14	0147	1.1				14	0056	1.0	29	0126	1.1
	0619	0.5		0658	0.5		0745	0.5					0724	0.5		0706	0.4
	1149	0.8		1326	0.8		1306	1.0					1226	0.9		1249	1.0
	1815	0.2		1845	0.2		1932	0.1					1817	0.2		1904	0.1
15	0132	1.0	30	0211	1.2	15	0202	1.1				15	0117	1.1	30	0154	1.1
	0711	0.5		0751	0.5		0811	0.4					0717	0.4		0732	0.4
	1228	0.9		1354	0.9		1334	1.0					1253	1.0		1241	1.1
	1904	0.1		1939	0.1		2013	0.0					1904	0.1		1949	0.0
			31	0256	1.2										31	0158	1.0
				0828	0.4											0758	0.3
				1353	0.9											1300	1.2
				2024	0.0											2026	0.0

2026

UBATUBA - BASE NORTE DO IOUSP

2026

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS									
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613									
ABRIL						MAIO						JUNHO									
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT			
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA			
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	
01	0136	1.0	16	0138	1.1	01	0119	1.1	16	0123	1.0	01	0209	1.1	16	0158	0.9				
	0828	0.2		0804	0.2		0836	0.1		0824	0.1		0936	0.1		0958	0.0				
	1326	1.2		1343	1.2		1343	1.2		1411	1.2		1453	1.1		1724	1.1				
	2104	0.1		2045	0.0		2111	0.2		2106	0.2		2202	0.4		2239	0.5				
02	0153	1.1	17	0153	1.1	02	0154	1.1	17	0141	1.0	02	0249	1.0	17	0234	1.0				
	0858	0.2		0845	0.1		0909	0.1		0911	0.1		1015	0.1		1053	0.0				
	1402	1.3		1408	1.3		1417	1.2		1432	1.1		1530	1.1		1826	1.0				
	2143	0.1		2124	0.1		2149	0.3		2158	0.3		2238	0.5		2317	0.5				
03	0217	1.1	18	0211	1.1	03	0224	1.1	18	0204	1.0	03	0319	1.0	18	0311	1.0				
	0932	0.2		0924	0.1		0951	0.1		1002	0.1		1058	0.1		1143	0.0				
	1438	1.3		1434	1.2		1458	1.1		1509	1.1		1609	1.0		1743	0.9				
	2211	0.2		2208	0.2		2217	0.4		2249	0.5		2311	0.5		1932	0.9				
																2358	0.6				
04	0251	1.1	19	0234	1.0	04	0258	1.0	19	0238	0.9	04	0351	0.9	19	0400	1.0				
	1004	0.2		1008	0.1		1030	0.1		1056	0.1		1147	0.2		1236	0.1				
	1509	1.2		1504	1.1		1536	1.1		1547	1.0		1653	1.0		1702	0.8				
	2245	0.3		2256	0.4		2251	0.5		1704	0.9		2354	0.6		1854	0.8				
										1858	1.0					2043	0.8				
										2339	0.6										
05	0317	1.1	20	0300	1.0	05	0324	1.0	20	0308	0.9	05	0417	0.9	20	0038	0.6				
	1043	0.2		1056	0.2		1109	0.2		1154	0.1		1238	0.2		0451	1.0				
	1549	1.1		1541	1.0		1611	1.0		1751	0.8		1738	0.9		1328	0.2				
	2309	0.5		2347	0.5		2324	0.6		2021	0.9					1738	0.8				
																1954	0.7				
																2149	0.7				
06	0349	1.0	21	0323	0.9	06	0347	0.9	21	0030	0.6	06	0041	0.6	21	0115	0.6				
	1126	0.3		1154	0.2		1158	0.2		0353	0.9		0449	0.8		0543	1.0				
	1621	1.0		1617	0.9		1656	0.9		1254	0.2		1330	0.3		1423	0.3				
	2345	0.6		1826	0.8					1713	0.8		1841	0.9		1821	0.7				
				2056	0.9					1811	0.8					2049	0.7				
										2134	0.9					2247	0.7				
07	0404	0.9	22	0045	0.7	07	0008	0.6	22	0121	0.7	07	0134	0.6	22	0206	0.6				
	1213	0.3		0354	0.9		0358	0.9		0439	0.9		0538	0.8		0647	0.9				
	1700	0.9		1300	0.3		1256	0.3		1358	0.3		1424	0.3		1524	0.4				
				1706	0.8		1745	0.8		2230	0.9		2143	0.9		1919	0.7				
				1849	0.7		2008	0.8								2138	0.7				
				2208	1.0											2324	0.7				
08	0026	0.7	23	0154	0.7	08	0104	0.7	23	0217	0.7	08	0228	0.5	23	0308	0.5				
	0408	0.9		0415	0.8		0409	0.8		0547	0.8		0913	0.8		0802	0.8				
	1311	0.4		0823	0.5		1358	0.3		1502	0.3		1521	0.3		1630	0.5				
	1747	0.8		1013	0.6		2211	0.9		2313	0.9		2245	0.9		2043	0.7				
	2008	0.7		1413	0.3											2217	0.7				
	2249	0.8		2304	1.0											2353	0.7				
09	0132	0.7	24	0451	0.7	09	0209	0.7	24	0319	0.6	09	0328	0.5	24	0423	0.5				
	0411	0.8		0838	0.6		0453	0.7		0734	0.8		1038	0.9		0938	0.8				
	1421	0.4		1106	0.7		0711	0.7		1609	0.3		1619	0.3		1734	0.5				
	2319	0.9		1538	0.3		0909	0.7		2356	0.8		2334	0.9		2217	0.8				
				2353	1.0		1502	0.3													
							2256	0.9													
10	0256	0.7	25	0517	0.7	10	0321	0.6	25	0424	0.6	10	0430	0.4	25	0532	0.4				
	0426	0.7		1145	0.8		1030	0.8		0924	0.8		1139	1.0		1239	0.9				
	0751	0.6		1653	0.3		1604	0.3		1713	0.3		1717	0.2		1830	0.5				
	1045	0.7					2334	1.0								2323	0.9				
	1539	0.4																			
	2353	0.9																			
11	0723	0.6	26	0024	1.0	11	0426	0.5	26	0019	0.8	11	0015	0.9	26	0626	0.3				
	1124	0.8		0549	0.6		1115	0.9		0521	0.5		0530	0.3		1239	0.9				
	1649	0.3		1202	0.9		1704	0.2		1038	0.9		1238	1.0		1915	0.4				
				1753	0.2					1806	0.3		1815	0.2							
12	0015	1.0	27	0056	1.0	12	0002	1.0	27	0026	0.8	12	0054	0.9	27	0009	0.9				
	0619	0.5		0617	0.5		0519	0.4		0609	0.4		0626	0.2		0713	0.2				
	1156	0.9		1149	1.0		1156	1.0		1126	1.0		1336	1.1		1317	1.0				
	1747	0.2		1841	0.2		1758	0.1		1856	0.3		1911	0.3		1958	0.4				

						2353	0.9										
13	0043	1.1	28	0109	0.9	13	0036	1.0	28	0654	0.3	13	0124	0.9	28	0051	1.0
	0621	0.4		0651	0.3		0608	0.3		1209	1.0		0723	0.2		0758	0.1
	1224	1.0		1202	1.0		1232	1.1		1938	0.3		1432	1.1		1343	1.1
	1836	0.1		1921	0.1		1847	0.1					2008	0.3		2039	0.4
14	0104	1.1	29	0047	1.0	14	0058	1.0	29	0023	1.0	14	0121	0.9	29	0128	1.0
	0654	0.3		0724	0.3		0654	0.2		0736	0.2		0813	0.1		0841	0.0
	1253	1.1		1230	1.1		1306	1.1		1253	1.1		1530	1.2		1419	1.1
	1917	0.0		2000	0.2		1934	0.1		2013	0.3		2100	0.3		2113	0.4
15	0124	1.1	30	0054	1.0	15	0117	1.0	30	0100	1.0	15	0126	0.9	30	0206	1.0
	0728	0.2		0758	0.2		0739	0.2		0813	0.1		0906	0.0		0921	0.0
	1319	1.2		1304	1.2		1336	1.2		1332	1.1		1626	1.1		1451	1.1
	2000	-0.1		2039	0.2		2019	0.1		2053	0.3		2153	0.4		2151	0.4
									31	0136	1.1						
										0856	0.1						
										1411	1.1						
										2128	0.4						

2026

UBATUBA - BASE NORTE DO IOUSP

2026

LATITUDE 23 30.0 S			LONGITUDE 45 7.3 W			FUSO + 3 HORAS											
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
JULHO						AGOSTO						SETEMBRO					
HORA			ALT			HORA			ALT			HORA			ALT		
DIA		M	DIA		M	DIA		M	DIA		M	DIA		M	DIA		M
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0245	1.0	16	0239	1.1	01	0338	1.2	16	0336	1.2	01	0402	1.2	16	0424	1.1
	1002	0.0		1038	-0.1		1102	0.0		1138	0.2		1153	0.2		1200	0.5
	1524	1.1		1632	1.0		1606	1.1		1556	1.0		1617	1.0		1621	0.9
	2221	0.4		2251	0.4		2256	0.3		2309	0.3		2341	0.3			
02	0319	1.0	17	0313	1.1	02	0404	1.1	17	0409	1.2	02	0432	1.1	17	0017	0.3
	1047	0.0		1121	0.0		1145	0.1		1211	0.3		1238	0.4		0502	0.9
	1600	1.1		1602	0.9		1634	1.1		1624	0.9		1645	0.9		0902	0.7
	2254	0.4		2319	0.5		2332	0.4		2351	0.4					1024	0.7
																1239	0.6
																1641	0.9
03	0354	1.0	18	0354	1.1	03	0430	1.1	18	0451	1.1	03	0038	0.4	18	0117	0.4
	1128	0.1		1204	0.1		1223	0.2		1251	0.5		0504	0.9		0553	0.8
	1634	1.1		1626	0.9		1702	1.0		1658	0.9		0815	0.8		0847	0.7
	2328	0.5		2351	0.5								0928	0.8		1119	0.8
													1336	0.5		1339	0.7
													1702	0.8		1639	0.8
													2102	0.6			
													2200	0.6			
04	0424	1.0	19	0434	1.1	04	0009	0.4	19	0041	0.4	04	0151	0.4	19	0230	0.4
	1209	0.1		1254	0.3		0500	1.0		0528	0.9		0554	0.8		0756	0.7
	1709	1.0		1700	0.9		1306	0.3		0936	0.6		0800	0.7		1156	0.8
							1728	0.9		1058	0.7		1106	0.9		1502	0.7
										1328	0.6		1454	0.7		1615	0.8
										1726	0.8		1719	0.7		2024	0.6
													2049	0.5		2319	0.7
													2323	0.6			
05	0004	0.5	20	0026	0.5	05	0102	0.4	20	0149	0.4	05	0315	0.4	20	0351	0.4
	0458	1.0		0513	1.0		0534	0.9		0615	0.8		0745	0.6		1217	0.9
	1256	0.2		1341	0.4		1400	0.4		0923	0.7		1204	1.0		1932	0.6
	1747	0.9		1739	0.8		1800	0.8		1158	0.7		2053	0.5		2349	0.8
										1419	0.7						
										1749	0.8						
										2215	0.6						
06	0051	0.5	21	0113	0.5	06	0206	0.5	21	0300	0.4	06	0009	0.7	21	0502	0.3
	0528	0.9		0602	0.9		0615	0.8		0753	0.7		0454	0.3		1245	1.0
	1347	0.3		1428	0.5		0845	0.8		0858	0.7		1253	1.1		1919	0.5
	1826	0.9		1817	0.8		1056	0.8		1228	0.8		1951	0.5			
				2254	0.6		1504	0.5		1558	0.7						
							1828	0.7		1704	0.7						
							2104	0.6		2153	0.7						
							2323	0.7		2345	0.7						
07	0145	0.5	22	0219	0.5	07	0324	0.4	22	0419	0.4	07	0051	0.8	22	0013	0.9
	0609	0.9		0702	0.8		1206	0.9		1256	0.9		0606	0.2		0600	0.2
	1441	0.3		1009	0.7		1634	0.6		1917	0.6		1332	1.2		1302	1.1
	1917	0.8		1202	0.7		1906	0.6					1924	0.5		1909	0.4
	2141	0.8		1530	0.6		2106	0.6									
				1915	0.8												
08	0245	0.5	23	0338	0.4	08	0019	0.7	23	0009	0.8	08	0113	0.9	23	0036	1.0
	0713	0.8		0843	0.7		0456	0.4		0534	0.3		0700	0.1		0651	0.1
	0856	0.8		1002	0.7		1302	1.1		1315	1.0		1406	1.2		1319	1.1
	1017	0.8		1249	0.8		1830	0.5		1930	0.5		1949	0.4		1923	0.4
	1539	0.4		1654	0.6												
	2317	0.8		2108	0.7												
				2343	0.7												
09	0353	0.4	24	0458	0.4	09	0102	0.8	24	0030	0.9	09	0128	1.0	24	0100	1.1
	1156	0.9		1309	0.9		0611	0.2		0630	0.2		0749	0.0		0732	0.0
	1649	0.4		1823	0.6		1353	1.2		1338	1.0		1439	1.2		1332	1.1
				2343	0.8		1932	0.5		1943	0.5		2011	0.3		1949	0.3
10	0015	0.8	25	0602	0.3	10	0139	0.9	25	0054	0.9	10	0124	1.1	25	0124	1.2
	0502	0.4		1338	0.9		0711	0.1		0715	0.1		0830	-0.1		0809	-0.1
	1300	1.0		1915	0.5		1434	1.2		1349	1.1		1453	1.1		1347	1.2
	1800	0.4					2008	0.4		2002	0.4		2041	0.3		2019	0.2
11	0104	0.8	26	0023	0.9	11	0158	0.9	26	0119	1.0	11	0138	1.2	26	0151	1.2

0613	0.3	0654	0.2	0802	0.0	0800	0.0	0909	-0.1	0853	-0.1
1356	1.1	1353	1.0	1508	1.2	1402	1.2	1423	1.0	1408	1.2
1911	0.4	1953	0.5	2043	0.4	2026	0.3	2109	0.3	2053	0.2
12 0145	0.9	27 0054	0.9	12 0154	1.0	27 0149	1.1	12 0204	1.3	27 0215	1.3
0715	0.1	0739	0.1	0851	-0.1	0841	-0.1	0953	0.0	0930	0.0
1447	1.2	1406	1.1	1543	1.2	1419	1.2	1428	1.0	1428	1.2
2008	0.4	2026	0.4	2111	0.3	2056	0.3	2139	0.2	2126	0.2
13 0208	0.9	28 0126	1.0	13 0202	1.1	28 0215	1.2	13 0238	1.3	28 0243	1.3
0809	0.0	0821	0.0	0934	-0.1	0919	-0.1	1028	0.1	1006	0.1
1532	1.2	1423	1.1	1543	1.1	1439	1.2	1456	1.0	1454	1.1
2058	0.4	2056	0.4	2145	0.3	2124	0.2	2211	0.2	2202	0.2
14 0154	0.9	29 0202	1.1	14 0224	1.2	29 0245	1.2	14 0309	1.3	29 0309	1.2
0900	-0.1	0902	0.0	1013	-0.1	0958	-0.1	1102	0.3	1049	0.2
1611	1.2	1441	1.2	1511	1.0	1504	1.2	1523	1.0	1515	1.1
2139	0.4	2126	0.3	2211	0.3	2154	0.2	2247	0.3	2241	0.2
15 0208	1.0	30 0236	1.1	15 0300	1.3	30 0309	1.3	15 0351	1.2	30 0341	1.1
0951	-0.1	0947	0.0	1056	0.0	1038	0.0	1136	0.4	1130	0.4
1653	1.1	1508	1.2	1524	1.0	1528	1.1	1556	1.0	1543	1.0
2213	0.4	2156	0.3	2241	0.3	2226	0.3	2326	0.3	2330	0.3
		31 0306	1.1			31 0336	1.2				
		1024	0.0			1111	0.1				
		1536	1.2			1556	1.1				
		2226	0.3			2300	0.3				

2026

UBATUBA - BASE NORTE DO IOUSP

2026

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS					
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
OUTUBRO						NOVEMBRO						DEZEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M
01	0411	1.0	16	0000	0.3	01	0147	0.3	16	0138	0.3	01	0232	0.3	16	0158	0.3
	1219	0.5		0453	0.9		1026	1.0		0938	0.8		1053	0.9		0713	0.8
	1602	0.9		1208	0.7		1432	0.7		1349	0.6		1441	0.6		1358	0.5
				1606	0.9		1651	0.8		1654	0.7		1839	0.8		1839	0.8
							2019	0.6									
							2223	0.6									
02	0032	0.3	17	0058	0.3	02	0258	0.3	17	0239	0.3	02	0339	0.3	17	0254	0.3
	0456	0.9		0538	0.8		1117	1.0		1030	0.9		1139	0.8		0947	0.8
	0708	0.8		0809	0.8		1602	0.7		1453	0.6		1539	0.6		1458	0.5
	0949	0.9		1015	0.8		1808	0.7		2149	0.8		2019	0.8		2145	0.8
	1323	0.7		1306	0.7		2008	0.7									
	1621	0.8		1604	0.8		2311	0.7									
	2024	0.5															
	2158	0.5															
03	0149	0.4	18	0202	0.4	03	0411	0.3	18	0341	0.3	03	0445	0.3	18	0351	0.3
	0549	0.7		1100	0.8		1202	1.0		1106	0.9		1209	0.8		1054	0.9
	0709	0.7		1419	0.7		1706	0.6		1554	0.5		1645	0.5		1558	0.4
	1058	1.0		1609	0.7		2347	0.8		2247	0.9		2204	0.9		2308	0.9
	1454	0.7		1943	0.6												
	1639	0.8		2156	0.7												
	2019	0.5															
	2304	0.6															
04	0311	0.4	19	0309	0.4	04	0517	0.2	19	0439	0.3	04	0545	0.4	19	0449	0.3
	1149	1.1		1134	0.9		1239	1.0		1141	1.0		1239	0.8		1145	0.9
	2017	0.6		1902	0.6		1749	0.5		1653	0.4		1743	0.4		1700	0.4
	2351	0.7		2304	0.8					2330	1.0		2315	0.9			
05	0441	0.3	20	0421	0.3	05	0002	0.9	20	0532	0.2	05	0638	0.4	20	0015	1.0
	1226	1.1		1200	1.0		0611	0.2		1208	1.0		1138	0.8		0549	0.3
	1843	0.6		1815	0.6		1304	0.9		1743	0.4		1834	0.3		1228	0.9
				2336	0.9		1824	0.4					2358	1.0		1800	0.3
							2353	1.0									
06	0021	0.8	21	0521	0.2	06	0700	0.2	21	0009	1.0	06	0721	0.4	21	0113	1.0
	0551	0.2		1223	1.0		1311	0.9		0619	0.2		1204	0.9		0647	0.3
	1304	1.1		1800	0.4		1902	0.3		1234	1.0		1919	0.2		1302	0.9
	1845	0.5								1830	0.3					1858	0.2
07	0043	0.9	22	0004	1.0	07	0013	1.1	22	0047	1.1	07	0039	1.0	22	0209	1.1
	0641	0.1		0611	0.1		0745	0.2		0708	0.1		0802	0.4		0745	0.3
	1339	1.1		1243	1.1		1236	1.0		1251	1.0		1241	1.0		1326	0.9
	1906	0.4		1832	0.3		1941	0.2		1915	0.2		2002	0.1		1954	0.1
08	0043	1.0	23	0032	1.1	08	0049	1.1	23	0126	1.1	08	0121	1.1	23	0304	1.2
	0724	0.0		0658	0.1		0823	0.2		0756	0.2		0845	0.4		0839	0.3
	1358	1.0		1258	1.1		1300	1.0		1309	1.0		1317	1.0		1332	0.9
	1938	0.3		1906	0.2		2019	0.1		2002	0.1		2045	0.1		2047	0.0
09	0047	1.1	24	0100	1.2	09	0123	1.2	24	0208	1.2	09	0204	1.1	24	0358	1.2
	0806	0.0		0741	0.0		0900	0.3		0847	0.2		0919	0.4		0928	0.4
	1338	1.0		1317	1.1		1334	1.1		1328	1.0		1400	1.0		1356	0.9
	2006	0.2		1945	0.2		2058	0.1		2053	0.1		2123	0.0		2139	-0.1
10	0109	1.2	25	0126	1.2	10	0204	1.2	25	0238	1.1	10	0243	1.1	25	0454	1.2
	0849	0.1		0821	0.0		0938	0.3		0936	0.3		0954	0.4		1013	0.4
	1332	1.0		1334	1.1		1406	1.1		1356	1.0		1438	1.0		1424	1.0
	2041	0.2		2024	0.1		2138	0.1		2143	0.0		2204	0.0		2228	-0.1
11	0143	1.2	26	0153	1.2	11	0245	1.1	26	0326	1.1	11	0321	1.1	26	0549	1.1
	0924	0.1		0902	0.1		1008	0.4		1023	0.4		1028	0.5		1058	0.5
	1358	1.1		1356	1.1		1445	1.0		1423	1.0		1513	1.0		1504	1.0
	2115	0.2		2104	0.1		2217	0.1		2236	0.0		2249	0.1		2317	0.0
12	0215	1.2	27	0221	1.2	12	0323	1.1	27	0604	1.0	12	0400	1.1	27	0647	1.0
	1000	0.2		0947	0.2		1043	0.5		1111	0.5		1100	0.5		1138	0.5
	1426	1.1		1417	1.1		1515	1.0		1500	0.9		1553	1.0		1545	1.0
	2151	0.2		2149	0.1		2300	0.1		2330	0.1		2332	0.1			
13	0256	1.2	28	0254	1.2	13	0404	1.0	28	0736	1.0	13	0439	1.0	28	0008	0.1
	1034	0.4		1032	0.3		1113	0.6		1202	0.6		1138	0.5		0445	0.9
	1500	1.1		1447	1.0		1547	0.9		1539	0.9		1623	0.9		0611	0.8
	2230	0.2		2238	0.1		2347	0.2								0753	0.8

												1211	0.5					
												1624	1.0					
14	0332	1.1	29	0326	1.1	14	0447	0.9	29	0026	0.1	14	0015	0.2	29	0100	0.2	
	1100	0.5		1119	0.5		1156	0.6		0554	0.8		0519	1.0		0511	0.8	
	1530	1.0		1508	0.9		1604	0.9		0853	0.9		1215	0.6		0724	0.7	
	2311	0.2		2332	0.2					1254	0.6		1656	0.9		0902	0.7	
										1621	0.9					1254	0.6	
																1711	1.0	
15	0408	1.0	30	0408	0.9	15	0039	0.3	30	0126	0.2	15	0104	0.2	30	0156	0.3	
	1132	0.6		0608	0.9		0534	0.9		0956	0.9		0608	0.9		0554	0.8	
	1556	0.9		0758	0.9		1249	0.6		1347	0.6		1302	0.6		0819	0.7	
				1213	0.6		1615	0.8		1717	0.9		1734	0.8		1013	0.7	
				1541	0.9											1339	0.5	
																1804	0.9	
																31	0256	0.4
				31	0036	0.2											0639	0.7
					0458	0.8											0908	0.6
					0615	0.8											1109	0.7
					0923	0.9											1438	0.5
					1315	0.7											1908	0.9
					1606	0.8											2345	0.7
																	2346	0.7

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PORTO DE SANTOS - TORRE GRANDE

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LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
JANEIRO						FEVEREIRO						MARCO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0241	1.4	16	0147	1.3	01	0351	1.6	16	0241	1.5	01	0253	1.5	16	0149	1.4
	0739	0.4		0815	0.5		0847	0.4		0858	0.4		0815	0.4		0823	0.4
	1336	1.0		1419	1.2		1453	1.3		1502	1.4		1409	1.3		1404	1.4
	1939	0.2		1928	0.1		2058	-0.1		2032	-0.1		1958	0.0		1928	0.0
02	0328	1.5	17	0221	1.3	02	0415	1.5	17	0304	1.5	02	0313	1.5	17	0209	1.5
	0826	0.4		0845	0.4		0909	0.4		0913	0.3		0819	0.3		0836	0.3
	1426	1.1		1451	1.3		1508	1.3		1528	1.4		1421	1.4		1438	1.5
	2023	0.1		2011	0.0		2138	-0.1		2115	-0.1		2032	-0.1		2013	-0.1
03	0409	1.5	18	0254	1.4	03	0434	1.4	18	0328	1.5	03	0332	1.5	18	0228	1.5
	0904	0.4		0909	0.4		0936	0.3		0926	0.3		0839	0.2		0843	0.3
	1451	1.1		1519	1.3		1524	1.4		1545	1.4		1439	1.5		1504	1.5
	2111	0.0		2053	0.0		2219	0.0		2158	-0.1		2109	0.0		2053	-0.1
04	0451	1.5	19	0324	1.5	04	0439	1.3	19	0354	1.5	04	0339	1.4	19	0253	1.5
	0932	0.5		0930	0.4		1004	0.3		0945	0.3		0906	0.2		0858	0.2
	1513	1.2		1541	1.3		1551	1.4		1604	1.4		1500	1.5		1528	1.5
	2202	0.0		2136	-0.1		2300	0.1		2243	0.0		2149	0.0		2134	-0.1
05	0519	1.4	20	0356	1.5	05	0449	1.3	20	0419	1.4	05	0349	1.3	20	0313	1.4
	1002	0.5		0947	0.4		1036	0.3		1006	0.3		0938	0.2		0919	0.2
	1539	1.2		1556	1.3		1613	1.4		1617	1.3		1524	1.5		1547	1.5
	2251	0.0		2223	0.0		2345	0.2		2326	0.1		2223	0.2		2217	0.0
06	0536	1.3	21	0424	1.4	06	0502	1.2	21	0451	1.3	06	0400	1.3	21	0343	1.4
	1030	0.5		1006	0.4		1109	0.3		1032	0.3		1009	0.2		0945	0.2
	1602	1.2		1611	1.2		1647	1.4		1638	1.2		1556	1.5		1608	1.4
	2339	0.1		2309	0.0								2300	0.3		2300	0.2
07	0543	1.2	22	0458	1.4	07	0023	0.4	22	0013	0.3	07	0413	1.2	22	0406	1.3
	1102	0.5		1028	0.4		0517	1.1		0515	1.2		1051	0.2		1011	0.3
	1634	1.2		1624	1.2		1154	0.4		1053	0.4		1624	1.4		1628	1.2
				2358	0.1		1719	1.3		1654	1.1		2338	0.5		2347	0.4
08	0023	0.2	23	0530	1.3	08	0106	0.5	23	0106	0.5	08	0434	1.2	23	0430	1.1
	0556	1.1		1056	0.4		0541	1.1		0547	1.0		1141	0.3		1041	0.4
	1138	0.5		1647	1.1		1256	0.4		1108	0.5		1700	1.3		1653	1.1
	1706	1.2					1800	1.1		1704	1.0		2128	0.6			
							2213	0.7		1958	0.9						
							2356	0.7		2239	1.0						
09	0106	0.3	24	0049	0.2	09	0200	0.7	24	0215	0.7	09	0453	1.1	24	0039	0.7
	0611	1.1		0606	1.2		0600	1.0		0602	0.9		1245	0.4		0445	1.0
	1221	0.5		1123	0.5		1408	0.5		1045	0.6		1739	1.2		0951	0.5
	1751	1.1		1700	1.0		1853	1.0		1713	0.8		2145	0.6		1709	0.9
							2228	0.8		1936	0.7					1917	0.8
																2249	1.0
10	0154	0.4	25	0139	0.3	10	0045	0.8	25	0002	1.1	10	0504	1.0	25	0204	0.9
	0641	1.0		0649	1.1		0306	0.8		1013	0.7		1351	0.4		0406	0.9
	1324	0.5		1154	0.5		0611	0.9		1254	0.7		1821	1.0		0917	0.6
	1845	1.1		1708	0.9		0936	0.8		1600	0.6		2200	0.7		1143	0.6
				1908	0.9		1136	0.8		1721	0.6					1402	0.6
				2208	1.0		1523	0.5		1913	0.6					1856	0.7
							2015	0.9									
							2217	0.8									
11	0245	0.5	26	0241	0.5	11	0102	0.9	26	0100	1.3	11	0100	0.9	26	0002	1.2
	0709	0.9		0739	0.9		0838	0.7		0751	0.6		0247	0.8		0819	0.6
	1447	0.5		1230	0.6		1215	0.9		1308	0.9		0502	0.9		1204	0.8
	2004	1.0		1719	0.8		1632	0.4		1845	0.4		0854	0.7		1602	0.5
				1900	0.8								1109	0.8			
				2345	1.1								1454	0.5			
													1926	0.9			
													2200	0.8			
12	0343	0.6	27	0358	0.6	12	0113	1.0	27	0147	1.4	12	0106	1.0	27	0051	1.3
	0813	0.8		0856	0.8		0754	0.6		0800	0.5		0811	0.7		0728	0.6
	1132	0.9		1254	0.7		1256	1.1		1336	1.0		1154	0.9		1232	0.9
	1602	0.5		1558	0.6		1734	0.3		1853	0.2		1558	0.4		1739	0.4
	2219	1.0		1856	0.6												
13	0500	0.7	28	0056	1.2	13	0130	1.2	28	0217	1.5	13	0109	1.1	28	0121	1.4
	1228	1.0		0615	0.6		0802	0.5		0811	0.4		0753	0.6		0736	0.5

1706	0.4		1324	0.8		1330	1.2		1353	1.2		1228	1.1		1251	1.1	
			1832	0.5		1824	0.2		1924	0.1		1700	0.3		1823	0.2	
14	0017	1.0	29	0154	1.4	14	0153	1.3				14	0115	1.2	29	0153	1.4
	0643	0.6		0741	0.5		0821	0.5					0756	0.5		0736	0.4
	1306	1.1		1354	1.0		1402	1.3					1300	1.2		1306	1.2
	1802	0.3		1904	0.3		1911	0.1					1756	0.2		1856	0.1
15	0104	1.1	30	0239	1.5	15	0215	1.4				15	0132	1.3	30	0211	1.4
	0743	0.6		0819	0.5		0841	0.4					0806	0.4		0730	0.3
	1347	1.2		1423	1.1		1436	1.3					1336	1.3		1321	1.3
	1849	0.2		1936	0.1		1951	0.0					1845	0.1		1930	0.1
			31	0313	1.6										31	0230	1.4
				0834	0.4											0743	0.2
				1439	1.2											1341	1.4
				2015	0.0											2006	0.0

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PORTO DE SANTOS - TORRE GRANDE

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LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
ABRIL						MAIO						JUNHO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0243	1.4	16	0151	1.4	01	0224	1.3	16	0149	1.3	01	0302	1.2	16	0251	1.1
	0808	0.1		0809	0.2		0813	0.1		0809	0.2		0917	0.1		0945	0.1
	1404	1.5		1443	1.5		1409	1.5		1539	1.5		1519	1.4		1736	1.5
	2043	0.1		2032	-0.1		2056	0.3		2102	0.2		2151	0.5		2215	0.5
02	0254	1.4	17	0213	1.4	02	0245	1.3	17	0215	1.2	02	0317	1.2	17	0315	1.1
	0839	0.1		0828	0.2		0853	0.1		0851	0.1		1006	0.1		1043	0.1
	1434	1.5		1521	1.5		1449	1.5		1641	1.4		1600	1.4		1811	1.4
	2115	0.2		2115	0.0		2130	0.4		2145	0.3		2215	0.5		2247	0.6
03	0306	1.3	18	0243	1.4	03	0300	1.3	18	0249	1.2	03	0326	1.2	18	0349	1.1
	0911	0.1		0900	0.2		0936	0.1		0939	0.2		1058	0.1		1143	0.1
	1502	1.6		1549	1.4		1523	1.5		1739	1.3		1641	1.4		1843	1.2
	2153	0.3		2156	0.2		2158	0.5		2224	0.5		2232	0.6		2313	0.6
04	0323	1.3	19	0306	1.3	04	0315	1.2	19	0308	1.1	04	0341	1.1	19	0409	1.1
	0953	0.1		0936	0.2		1024	0.2		1043	0.2		1153	0.2		1238	0.2
	1538	1.5		1628	1.3		1602	1.4		1838	1.3		1719	1.3		1900	1.1
	2223	0.4		2238	0.4		2223	0.5		2304	0.6		2247	0.6		2347	0.7
05	0339	1.3	20	0332	1.2	05	0330	1.2	20	0332	1.0	05	0354	1.0	20	0445	1.0
	1038	0.2		1021	0.3		1121	0.2		1154	0.3		1241	0.2		1324	0.3
	1608	1.4		1721	1.2		1643	1.3		1936	1.2		1804	1.3		1911	1.0
	2238	0.5		2319	0.6		2208	0.6		2345	0.8		2313	0.6			
06	0356	1.2	21	0353	1.1	06	0347	1.1	21	0339	1.0	06	0356	1.0	21	0021	0.7
	1134	0.3		1130	0.4		1215	0.3		1300	0.3		0711	0.8		0532	1.0
	1649	1.3		2013	1.0		1723	1.2		2039	1.1		1324	0.2		1409	0.3
	2115	0.6					2208	0.7					1856	1.2		1934	0.9
													2351	0.7			
07	0409	1.1	22	0008	0.8	07	0356	1.0	22	0024	0.8	07	0354	0.9	22	0121	0.7
	1234	0.3		0351	1.0		1306	0.3		0321	0.9		0645	0.8		0730	0.9
	1724	1.2		0949	0.6		1809	1.1		0800	0.8		0934	0.9		1458	0.4
	2134	0.7		1256	0.4		2236	0.8		0938	0.8		1411	0.2		2009	0.9
				2208	1.0					1400	0.3		1954	1.1			
										2156	1.0						
08	0419	1.0	23	0256	0.9	08	0347	0.9	23	0141	0.9	08	0047	0.7	23	0300	0.6
	1328	0.4		0813	0.6		0723	0.7		0309	0.9		0356	0.8		0930	1.0
	1809	1.1		1041	0.7		0936	0.8		0654	0.8		0641	0.7		1551	0.5
	2156	0.7		1413	0.4		1358	0.3		1013	0.9		1023	1.0		2330	0.9
				2332	1.1		1913	1.1		1454	0.3		1502	0.3			
							2326	0.8		2309	1.0		2100	1.1			
09	0402	0.9	24	0717	0.7	09	0306	0.9	24	0602	0.8	09	0247	0.8	24	0424	0.5
	0804	0.7		1111	0.9		0700	0.7		1038	1.0		0358	0.8		1041	1.0
	1034	0.8		1530	0.4		1024	0.9		1547	0.4		0651	0.7		1649	0.6
	1423	0.4					1447	0.3		2356	1.0		1109	1.1			
	1917	1.0					2049	1.0					1600	0.3			
	2204	0.8											2206	1.1			
10	0102	0.9	25	0015	1.2	10	0658	0.6	25	0536	0.6	10	0654	0.6	25	0034	1.0
	0736	0.6		0656	0.6		1104	1.0		1056	1.1		1158	1.2		0526	0.4
	1111	0.9		1139	1.0		1539	0.3		1638	0.4		1704	0.3		1138	1.1
	1519	0.4		1638	0.3		2224	1.1					2309	1.1		1802	0.6
11	0047	1.0	26	0053	1.2	11	0706	0.5	26	0024	1.0	11	0643	0.5	26	0109	1.1
	0723	0.6		0653	0.6		1145	1.2		0536	0.5		1254	1.3		0613	0.2
	1151	1.0		1153	1.1		1636	0.2		1123	1.2		1813	0.3		1230	1.2
	1617	0.3		1732	0.3		2328	1.2		1730	0.4					1915	0.6
12	0039	1.1	27	0111	1.2	12	0717	0.5	27	0051	1.1	12	0008	1.1	27	0149	1.2
	0734	0.5		0641	0.5		1223	1.3		0606	0.3		0649	0.3		0658	0.1
	1224	1.2		1211	1.2		1736	0.2		1158	1.2		1358	1.4		1319	1.2
	1717	0.2		1817	0.2					1824	0.4		1921	0.3		2006	0.5
13	0049	1.2	28	0130	1.3	13	0009	1.2	28	0119	1.2	13	0100	1.1	28	0217	1.2
	0747	0.4		0647	0.3		0724	0.4		0639	0.2		0721	0.2		0738	0.1
	1258	1.3		1234	1.3		1304	1.4		1238	1.3		1502	1.4		1404	1.3
	1815	0.1		1900	0.2		1834	0.1		1917	0.4		2017	0.3		2043	0.5
14	0108	1.3	29	0147	1.3	14	0043	1.3	29	0149	1.2	14	0139	1.1	29	0249	1.3
	0756	0.4		0709	0.2		0723	0.3		0715	0.1		0804	0.1		0817	0.0
	1334	1.4		1304	1.4		1349	1.4		1315	1.3		1600	1.5		1445	1.4
	1906	0.0		1939	0.2		1928	0.1		2002	0.4		2102	0.4		2113	0.4

15	0126	1.4	30	0204	1.3	15	0115	1.3	30	0215	1.2	15	0215	1.1	30	0313	1.3
	0800	0.3		0739	0.1		0738	0.2		0754	0.1		0853	0.1		0858	0.0
	1409	1.5		1338	1.5		1441	1.5		1400	1.4		1651	1.5		1521	1.4
	1949	-0.1		2017	0.3		2017	0.1		2045	0.4		2139	0.4		2141	0.4
									31	0243	1.3						
										0834	0.0						
										1441	1.4						
										2119	0.4						

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PORTO DE SANTOS - TORRE GRANDE

2026

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS									
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701									
JULHO						AGOSTO						SETEMBRO									
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT					
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M		
01	0334	1.3	16	0328	1.2	01	0358	1.3	16	0358	1.5	01	0413	1.3	16	0439	1.4				
	0943	0.0		1023	0.0		1045	0.0		1115	0.2		1145	0.3		0902	0.6				
	1558	1.4		1734	1.4		1638	1.5		1653	1.2		1658	1.3		1634	1.1				
	2202	0.4		2221	0.4		2219	0.3		2253	0.3		2239	0.3							
02	0345	1.2	17	0353	1.3	02	0409	1.3	17	0423	1.4	02	0432	1.2	17	0015	0.4				
	1030	0.0		1111	0.0		1132	0.1		1200	0.4		1238	0.5		0513	1.2				
	1632	1.4		1745	1.3		1706	1.4		1704	1.1		1723	1.1		0911	0.6				
	2221	0.5		2249	0.4		2241	0.4		2326	0.3		2258	0.4		1249	0.8				
																1649	1.0				
03	0354	1.2	18	0411	1.3	03	0424	1.2	18	0456	1.3	03	0449	1.0	18	0126	0.4				
	1119	0.1		1200	0.2		1219	0.2		1247	0.5		0806	0.9		0558	1.1				
	1706	1.4		1751	1.2		1741	1.3		1717	1.1		0958	0.9		0932	0.7				
	2239	0.5		2313	0.4		2304	0.4					1343	0.7		1245	0.9				
													1749	1.0		1408	0.9				
													2247	0.5		1654	0.9				
																2100	0.7				
																2258	0.7				
04	0406	1.1	19	0443	1.3	04	0441	1.1	19	0015	0.4	04	0458	0.9	19	0238	0.5				
	1208	0.1		1247	0.3		1308	0.3		0532	1.2		0739	0.8		0700	0.9				
	1743	1.3		1800	1.1		1813	1.2		0939	0.7		1138	1.0		0945	0.8				
	2302	0.5		2349	0.5		2328	0.4		1153	0.7		1511	0.8		1300	1.0				
										1339	0.7		1719	0.8		2015	0.7				
										1736	1.0		2217	0.6		2341	0.9				
05	0417	1.1	20	0513	1.2	05	0453	1.0	20	0138	0.5	05	0047	0.7	20	0349	0.4				
	1254	0.2		1328	0.4		0809	0.9		0615	1.0		0258	0.6		1304	1.0				
	1821	1.3		1813	1.0		0923	0.9		0956	0.7		0500	0.7		1956	0.6				
	2330	0.5					1404	0.5		1241	0.8		0715	0.6							
							1854	1.0		1445	0.8		1238	1.2							
							2347	0.5		1749	0.9		1949	0.6							
										2151	0.7										
										2332	0.7										
06	0426	1.0	21	0036	0.5	06	0502	0.9	21	0300	0.5	06	0058	0.8	21	0011	1.0				
	0717	0.9		0558	1.1		0732	0.8		0724	0.9		0702	0.4		0454	0.3				
	1343	0.2		1411	0.6		1113	1.0		0958	0.8		1319	1.4		1306	1.1				
	1904	1.2		1834	1.0		1509	0.6		1306	0.9		1953	0.5		1951	0.5				
							1947	0.9		1611	0.8										
							2345	0.6		1741	0.8										
										2100	0.7										
07	0004	0.6	22	0158	0.5	07	0109	0.7	22	0009	0.9	07	0121	1.0	22	0049	1.2				
	0439	0.9		0702	1.0		0511	0.7		0419	0.4		0651	0.3		0549	0.2				
	0654	0.9		1047	0.8		0713	0.7		1323	1.0		1358	1.5		1311	1.2				
	0947	1.0		1156	0.8		1230	1.1		2034	0.7		2006	0.4		2000	0.4				
	1432	0.3		1506	0.7		1653	0.7													
	1956	1.1		1851	0.9		2151	0.8													
							2306	0.7													
08	0051	0.6	23	0338	0.5	08	0117	0.8	23	0049	1.0	08	0145	1.2	23	0115	1.3				
	0458	0.8		0906	0.9		0702	0.5		0526	0.3		0713	0.1		0634	0.1				
	0651	0.8		1049	0.9		1326	1.3		1334	1.1		1432	1.5		1328	1.3				
	1056	1.0		1245	0.9		1947	0.6		2017	0.6		2019	0.4		2011	0.4				
	1530	0.4		1615	0.7																
	2100	1.0		1902	0.8																
				2113	0.8																
09	0309	0.7	24	0028	0.9	09	0147	0.9	24	0117	1.2	09	0202	1.3	24	0149	1.4				
	0509	0.7		0454	0.4		0653	0.3		0619	0.2		0739	0.0		0715	0.0				
	0651	0.7		1302	1.0		1413	1.5		1343	1.2		1458	1.5		1345	1.4				
	1204	1.1		2032	0.7		2021	0.5		2021	0.5		2023	0.3		2026	0.3				
	1643	0.5																			
	2215	0.9																			
10	0628	0.5	25	0104	1.0	10	0211	1.1	25	0151	1.3	10	0215	1.4	25	0217	1.5				
	1313	1.3		0554	0.3		0723	0.1		0702	0.1		0811	-0.1		0749	-0.1				
	1819	0.5		1321	1.1		1458	1.6		1400	1.3		1521	1.5		1406	1.5				
				2008	0.6		2045	0.4		2036	0.4		2034	0.2		2034	0.3				
11	0026	0.9	26	0139	1.2	11	0236	1.2	26	0217	1.4	11	0226	1.5	26	0245	1.5				

0641	0.4	0639	0.2	0758	0.0	0738	0.0	0847	-0.1	0828	-0.1
1415	1.4	1345	1.2	1536	1.6	1423	1.4	1534	1.4	1426	1.5
1943	0.4	2023	0.5	2054	0.4	2051	0.4	2058	0.2	2045	0.2
12 0202	1.0	27 0208	1.3	12 0249	1.3	27 0247	1.5	12 0247	1.5	27 0309	1.6
0721	0.2	0721	0.1	0834	-0.1	0815	-0.1	0921	0.0	0908	-0.1
1508	1.5	1413	1.3	1602	1.6	1445	1.5	1541	1.3	1454	1.5
2036	0.4	2045	0.5	2111	0.3	2106	0.3	2124	0.2	2106	0.2
13 0234	1.1	28 0241	1.3	13 0300	1.4	28 0309	1.5	13 0306	1.6	28 0328	1.5
0804	0.1	0800	0.0	0913	-0.1	0853	-0.1	0958	0.1	0947	0.0
1556	1.6	1443	1.4	1628	1.5	1508	1.5	1551	1.3	1517	1.4
2111	0.4	2106	0.4	2128	0.3	2121	0.3	2158	0.2	2130	0.2
14 0253	1.2	29 0306	1.4	14 0311	1.4	29 0330	1.5	14 0336	1.5	29 0349	1.4
0849	0.0	0836	-0.1	0954	-0.1	0932	-0.1	1034	0.3	1028	0.2
1638	1.6	1511	1.5	1639	1.4	1532	1.5	1602	1.2	1549	1.3
2132	0.4	2128	0.4	2154	0.3	2136	0.3	2234	0.2	2200	0.2
15 0313	1.2	30 0330	1.4	15 0332	1.5	30 0345	1.5	15 0404	1.5	30 0408	1.3
0936	0.0	0917	-0.1	1036	0.1	1013	0.0	1106	0.5	1113	0.4
1706	1.5	1541	1.5	1643	1.3	1600	1.5	1615	1.2	1611	1.2
2158	0.4	2145	0.4	2219	0.3	2154	0.2	2317	0.3	2236	0.3
		31 0347	1.4			31 0400	1.4				
		1000	-0.1			1058	0.1				
		1608	1.5			1626	1.4				
		2202	0.3			2215	0.3				

2026

PORTO DE SANTOS - TORRE GRANDE

2026

LATITUDE 23 57.0 S LONGITUDE 46 18.5 W FUSO + 3 HORAS

PORTO DE SANTOS NIVEL MEDIO .77 M CARTA 1701

OUTUBRO						NOVEMBRO						DEZEMBRO									
HORA			ALT			HORA			ALT			HORA			ALT						
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M		
01	0430	1.1	16	0013	0.3	01	0139	0.4	16	0143	0.3	01	0224	0.3	16	0153	0.3				
	1206	0.6		0506	1.2		1049	1.1		0651	1.1		1017	1.0		0719	1.1				
	1636	1.0		0906	0.7		1917	0.7		1117	0.8		1556	0.8		1234	0.7				
	2324	0.4		1608	1.0		2243	0.8		1545	0.9		1738	0.8		1623	0.9				
										1853	0.8		2217	1.0		1826	0.8				
										2154	0.9					2151	1.0				
02	0453	0.9	17	0109	0.4	02	0302	0.4	17	0228	0.3	02	0321	0.4	17	0241	0.3				
	0709	0.9		0554	1.1		1147	1.1		0806	1.0		1117	1.0		0823	1.1				
	1000	1.0		0928	0.7		1839	0.7		1847	0.7		1632	0.7		1353	0.7				
	1319	0.8		1606	0.9		2317	1.0		2243	1.0		2239	1.0		1649	0.8				
	1632	0.9		2008	0.7											1838	0.7				
	2124	0.6		2200	0.8											2247	1.1				
	2258	0.6																			
03	0106	0.5	18	0208	0.4	03	0421	0.4	18	0319	0.3	03	0419	0.4	18	0336	0.3				
	0504	0.7		0656	1.0		1221	1.2		0943	1.0		1156	1.0		0932	1.1				
	0645	0.7		0953	0.8		1841	0.6		1854	0.6		1706	0.6		1534	0.7				
	1128	1.1		1245	0.9		2343	1.1		2323	1.1		2309	1.1		1704	0.7				
	2049	0.6		1928	0.7											1841	0.7				
	2343	0.7		2254	0.9											2339	1.2				
04	0313	0.5	19	0306	0.4	04	0521	0.3	19	0415	0.3	04	0515	0.4	19	0438	0.3				
	0504	0.6		1232	1.0		1251	1.2		1051	1.1		1230	1.0		1036	1.1				
	0613	0.6		1913	0.6		1838	0.5		1902	0.5		1739	0.4		1721	0.6				
	1219	1.2		2330	1.0								2345	1.2							
	1915	0.6																			
05	0009	0.9	20	0406	0.3	05	0004	1.2	20	0004	1.2	05	0609	0.4	20	0038	1.2				
	0608	0.4		1213	1.1		0604	0.2		0515	0.2		1302	1.1		0547	0.3				
	1258	1.3		1919	0.5		1311	1.2		1136	1.2		1817	0.3		1132	1.1				
	1921	0.5					1836	0.4		1908	0.5					1813	0.4				
06	0039	1.1	21	0004	1.2	06	0023	1.3	21	0047	1.3	06	0023	1.2	21	0139	1.3				
	0621	0.2		0506	0.2		0641	0.2		0613	0.2		0658	0.4		0654	0.3				
	1330	1.4		1221	1.2		1332	1.2		1213	1.2		1336	1.2		1223	1.1				
	1932	0.5		1934	0.5		1854	0.3		1856	0.4		1858	0.2		1856	0.3				
07	0056	1.2	22	0041	1.3	07	0053	1.4	22	0132	1.4	07	0106	1.3	22	0239	1.4				
	0643	0.1		0558	0.1		0717	0.2		0706	0.1		0739	0.4		0749	0.3				
	1354	1.4		1238	1.3		1351	1.2		1249	1.3		1406	1.2		1313	1.1				
	1932	0.4		1945	0.4		1923	0.2		1915	0.3		1939	0.1		1941	0.2				
08	0115	1.3	23	0115	1.4	08	0121	1.4	23	0221	1.5	08	0149	1.3	23	0334	1.5				
	0713	0.0		0641	0.0		0756	0.3		0751	0.1		0817	0.4		0838	0.3				
	1415	1.4		1300	1.4		1413	1.3		1321	1.3		1438	1.2		1358	1.1				
	1936	0.3		1947	0.3		2000	0.1		1949	0.2		2023	0.0		2028	0.1				
09	0128	1.4	24	0149	1.5	09	0156	1.5	24	0313	1.5	09	0226	1.4	24	0421	1.5				
	0747	0.0		0724	0.0		0830	0.3		0836	0.2		0856	0.5		0919	0.4				
	1430	1.4		1323	1.4		1436	1.2		1356	1.2		1504	1.2		1434	1.1				
	1958	0.2		1951	0.3		2039	0.1		2030	0.1		2108	0.0		2121	0.0				
10	0153	1.5	25	0224	1.5	10	0230	1.5	25	0408	1.4	10	0306	1.4	25	0506	1.5				
	0817	0.1		0808	0.0		0904	0.4		0919	0.3		0928	0.5		0956	0.5				
	1443	1.3		1353	1.4		1456	1.2		1426	1.2		1526	1.2		1508	1.1				
	2024	0.1		2011	0.2		2123	0.1		2119	0.1		2158	0.1		2217	0.0				
11	0215	1.5	26	0256	1.5	11	0306	1.4	26	0504	1.4	11	0345	1.4	26	0549	1.4				
	0854	0.1		0847	0.0		0938	0.5		1002	0.4		0956	0.5		1028	0.5				
	1458	1.3		1417	1.4		1511	1.2		1500	1.1		1541	1.2		1545	1.1				
	2100	0.1		2041	0.2		2213	0.1		2215	0.2		2249	0.1		2313	0.1				
12	0249	1.5	27	0330	1.5	12	0347	1.4	27	0602	1.3	12	0419	1.4	27	0621	1.3				
	0924	0.3		0926	0.2		1002	0.5		1043	0.6		1021	0.5		1100	0.6				
	1509	1.3		1449	1.3		1526	1.1		1524	1.0		1554	1.1		1611	1.1				
	2139	0.1		2117	0.2		2306	0.2		2319	0.2		2338	0.1							
13	0315	1.5	28	0409	1.4	13	0423	1.3	28	0700	1.2	13	0500	1.3	28	0006	0.1				
	0956	0.4		1009	0.3		1017	0.6		1121	0.7		1039	0.6		0647	1.1				
	1526	1.2		1511	1.2		1541	1.1		1553	1.0		1606	1.1		1130	0.6				
	2223	0.2		2202	0.2											1649	1.1				
14	0353	1.5	29	0447	1.2	14	0000	0.2	29	0024	0.2	14	0023	0.2	29	0058	0.2				
	1021	0.5		1054	0.5		0504	1.3		0800	1.1		0541	1.3		0704	1.0				
	1543	1.2		1541	1.1		0949	0.7		1206	0.8		1104	0.6		1204	0.6				

2026

CANANEIA - BASE SUL DO IOUSP

2026

LATITUDE 25 1.0 S						LONGITUDE 47 55.5 W						FUSO + 3 HORAS								
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703								
JANEIRO						FEVEREIRO						MARCO								
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0149	1.4	16	0130	1.3	01	0317	1.5	16	0236	1.5	01	0224	1.5	16	0130	1.5			
	0858	0.4		0904	0.5		0928	0.5		0902	0.4		0841	0.4		0836	0.4			
	1341	1.2		1428	1.3		1506	1.3		1530	1.5		1408	1.3		1424	1.4			
	2056	0.3		1956	0.1		2145	0.1		2102	-0.2		2056	0.1		2004	-0.1			
02	0243	1.5	17	0211	1.4	02	0356	1.6	17	0309	1.6	02	0258	1.6	17	0206	1.6			
	0951	0.4		0917	0.5		0856	0.5		0851	0.4		0821	0.4		0830	0.4			
	1434	1.2		1508	1.3		1547	1.4		1604	1.5		1449	1.4		1500	1.5			
	2134	0.2		2036	0.0		2158	0.1		2139	-0.2		2113	0.1		2043	-0.2			
03	0328	1.5	18	0256	1.5	03	0432	1.5	18	0349	1.6	03	0330	1.6	18	0245	1.6			
	1030	0.5		0856	0.5		0908	0.4		0900	0.3		0823	0.3		0823	0.3			
	1519	1.2		1551	1.4		1619	1.4		1639	1.5		1519	1.5		1538	1.5			
	2204	0.2		2115	-0.1		2200	0.2		2213	-0.1		2119	0.1		2117	-0.1			
04	0411	1.5	19	0334	1.5	04	0506	1.5	19	0423	1.6	04	0404	1.5	19	0319	1.6			
	0917	0.6		0856	0.5		0938	0.3		0917	0.3		0849	0.2		0830	0.2			
	1604	1.3		1626	1.4		1651	1.3		1709	1.4		1554	1.5		1609	1.5			
	2223	0.2		2156	-0.1		2209	0.2		2249	0.0		2123	0.2		2151	0.0			
05	0454	1.5	20	0409	1.6	05	0547	1.4	20	0500	1.5	05	0441	1.5	20	0358	1.6			
	0919	0.6		0911	0.4		1008	0.2		0947	0.2		0917	0.1		0853	0.2			
	1647	1.2		1702	1.3		1711	1.3		1743	1.3		1621	1.4		1649	1.5			
	2223	0.2		2236	-0.1		2228	0.3		2315	0.2		2138	0.2		2217	0.1			
06	0536	1.5	21	0449	1.6	06	0623	1.3	21	0543	1.4	06	0513	1.4	21	0439	1.4			
	0951	0.5		0939	0.4		1047	0.2		1011	0.2		0954	0.1		0915	0.2			
	1719	1.2		1738	1.3		1730	1.2		1817	1.2		1649	1.4		1724	1.4			
	2241	0.3		2315	0.0		2254	0.4		2339	0.4		2156	0.3		2236	0.3			
07	0611	1.4	22	0524	1.5	07	0702	1.1	22	0623	1.2	07	0553	1.2	22	0517	1.3			
	1021	0.4		1006	0.3		1121	0.3		1047	0.2		1024	0.1		0949	0.2			
	1753	1.1		1808	1.2		1736	1.1		1906	1.1		1715	1.3		1806	1.3			
	2306	0.3		2358	0.1		2313	0.5		2353	0.6		2213	0.3		2247	0.5			
08	0654	1.3	23	0604	1.5	08	0319	0.9	23	0713	1.0	08	0632	1.1	23	0602	1.1			
	1100	0.4		1038	0.3		0456	0.9		1115	0.3		1102	0.2		1017	0.2			
	1526	1.1		1849	1.1		0754	1.0		1526	1.0		1751	1.2		1900	1.2			
	2338	0.4					1204	0.4		1738	0.9		2239	0.4		2256	0.7			
							1847	1.1		2019	1.0									
							2345	0.6		2354	0.8									
09	0739	1.1	24	0041	0.3	09	0323	0.9	24	0206	0.9	09	0245	1.0	24	0154	0.9			
	1145	0.4		0651	1.4		0608	0.8		0521	0.7		0509	0.9		0434	0.8			
	1608	1.1		1108	0.3		0856	0.9		0817	0.9		0717	0.9		0700	0.9			
				1543	1.0		1258	0.5		1156	0.5		1145	0.3		1056	0.3			
				1711	1.0		2019	1.0		1536	0.9		1839	1.1		1458	0.8			
				1945	1.1					1813	0.7		2302	0.5		1641	0.8			
										2206	1.0					2004	1.1			
										2354	1.0					2302	0.9			
10	0006	0.5	25	0143	0.4	10	0011	0.7	25	0217	1.1	10	0254	1.0	25	0202	1.1			
	0828	1.0		0741	1.2		0338	1.0		0636	0.6		0613	0.8		0553	0.6			
	1232	0.5		1149	0.4		0700	0.7		0947	0.8		0830	0.8		0815	0.8			
	1658	1.0		1553	1.0		1013	0.9		1245	0.6		1234	0.5		1139	0.5			
	1854	1.0		1802	0.9		1438	0.6		1539	0.8		1945	1.1		1458	0.8			
	2015	1.0		2056	1.0		2153	1.0		1854	0.5		2330	0.7		1738	0.6			
																2151	1.0			
																2304	1.0			
11	0051	0.6	26	0426	0.6	11	0058	0.8	26	0219	1.2	11	0304	1.1	26	0219	1.2			
	0400	0.8		0839	1.1		0345	1.0		0723	0.5		0656	0.7		0643	0.5			
	0556	0.7		1224	0.5		0739	0.6		1117	0.9		1000	0.8		0956	0.8			
	0934	1.0		1602	0.9		1141	1.0		1924	0.4		1438	0.6		1243	0.7			
	1338	0.6		1839	0.8		1734	0.5					2100	1.0		1453	0.7			
	2141	1.0		2215	1.0		2313	1.1								1817	0.5			
12	0141	0.7	27	0602	0.5	12	0208	1.0	27	0147	1.3	12	0002	0.8	27	0223	1.2			
	0402	0.8		0953	1.0		0328	1.0		0802	0.4		0313	1.1		0715	0.5			
	0656	0.7		1311	0.6		0806	0.5		1238	1.0		0721	0.6		1119	0.9			
	1049	1.0		1608	0.8		1245	1.1		1958	0.2		1124	0.9		1858	0.3			
	1524	0.6		1906	0.6		1826	0.3					1711	0.5						
	2251	1.0		2356	1.1								2230	1.0						
13	0349	0.8	28	0711	0.5	13	0024	1.2	28	0158	1.4	13	0054	1.0	28	0124	1.3			

0738	0.6	1111	0.9	0834	0.5	0834	0.4	0315	1.1	0747	0.5			
1158	1.1	1439	0.7	1332	1.2	1326	1.2	0749	0.5	1219	1.1			
1730	0.5	1558	0.7	1908	0.1	2028	0.1	1224	1.1	1932	0.2			
2351	1.1	1943	0.4					1804	0.3					
								2358	1.2					
14	0809	0.6	29	0115	1.3	14	0115	1.3	14	0806	0.4	29	0130	1.4
	1258	1.1		0808	0.4		0856	0.5		1308	1.2		0756	0.5
	1828	0.3		1236	1.0		1413	1.3		1849	0.1		1302	1.2
				2013	0.3		1949	0.0					2000	0.2
15	0043	1.2	30	0202	1.4	15	0158	1.4	15	0053	1.3	30	0158	1.5
	0843	0.5		0856	0.4		0908	0.4		0824	0.4		0738	0.4
	1347	1.2		1338	1.1		1454	1.4		1349	1.4		1343	1.4
	1913	0.2		2051	0.2		2024	-0.1		1926	0.0		2023	0.2
			31	0241	1.5							31	0228	1.5
				0930	0.5								0734	0.3
				1424	1.3								1415	1.4
				2121	0.1								2032	0.2

2026

CANANEIA - BASE SUL DO IOUSP

2026

LATITUDE 25 1.0 S			LONGITUDE 47 55.5 W			FUSO + 3 HORAS											
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703					
ABRIL						MAIO						JUNHO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M
01	0302	1.5	16	0211	1.6	01	0306	1.4	16	0232	1.4	01	0354	1.3	16	0351	1.2
	0756	0.1		0749	0.3		0802	0.0		0739	0.2		0904	0.0		0909	0.2
	1453	1.5		1504	1.5		1458	1.4		1526	1.5		1600	1.4		1700	1.5
	2038	0.2		2100	0.0		2017	0.4		2147	0.4		2056	0.5		2145	0.7
02	0338	1.5	17	0254	1.6	02	0343	1.4	17	0313	1.3	02	0426	1.2	17	0434	1.2
	0823	0.1		0800	0.2		0839	0.0		0806	0.2		0951	0.1		0951	0.3
	1524	1.5		1547	1.5		1538	1.4		1619	1.5		1643	1.4		1745	1.5
	2051	0.3		2134	0.2		2041	0.4		2209	0.5		2121	0.5		2154	0.7
03	0408	1.4	18	0336	1.5	03	0413	1.3	18	0400	1.2	03	0458	1.1	18	0113	0.9
	0858	0.0		0821	0.2		0913	0.0		0839	0.2		1039	0.1		0200	0.9
	1556	1.5		1630	1.5		1613	1.4		1708	1.5		1719	1.5		0513	1.1
	2104	0.3		2154	0.3		2104	0.4		2145	0.7		2153	0.5		1038	0.3
																1823	1.4
																2217	0.6
04	0445	1.3	19	0413	1.3	04	0447	1.2	19	0449	1.1	04	0211	1.0	19	0154	1.0
	0934	0.0		0854	0.2		0956	0.1		0917	0.3		0541	1.0		0406	1.0
	1630	1.4		1713	1.4		1654	1.4		1758	1.4		1139	0.2		0604	1.0
	2124	0.3		2202	0.5		2128	0.4		2158	0.7		1758	1.4		1128	0.4
													2219	0.5		1902	1.3
																2256	0.5
05	0517	1.2	20	0500	1.1	05	0209	1.0	20	0053	0.9	05	0221	1.1	20	0234	1.1
	1008	0.1		0923	0.2		0339	1.0		0300	0.8		0538	0.9		0534	0.9
	1704	1.4		1802	1.3		0517	1.0		0539	1.0		0704	0.9		0709	0.9
	2151	0.4		2209	0.7		1039	0.2		1004	0.3		1247	0.2		1219	0.4
							1734	1.4		1845	1.3		1839	1.4		1949	1.2
							2158	0.5		2219	0.7		2254	0.5		2334	0.5
06	0219	1.0	21	0106	0.9	06	0202	1.1	21	0124	1.1	06	0245	1.0	21	0311	1.1
	0351	1.0		0304	0.8		1134	0.3		0441	0.8		0600	0.8		0617	0.9
	0554	1.0		0551	1.0		1811	1.3		0645	0.9		0824	0.9		0828	0.9
	1049	0.2		1002	0.3		2223	0.5		1106	0.4		1353	0.2		1306	0.5
	1745	1.3		1856	1.2					1315	0.5		1921	1.4		2036	1.1
	2209	0.4		2228	0.8					1434	0.5		2330	0.6			
										1928	1.2						
										2258	0.8						
07	0213	1.1	22	0128	1.0	07	0213	1.1	22	0206	1.1	07	0302	1.0	22	0019	0.6
	0521	0.9		0453	0.7		0600	0.8		0545	0.7		0613	0.8		0358	1.0
	0647	0.9		0656	0.8		0751	0.8		0802	0.9		0926	1.0		0653	0.8
	1128	0.3		1049	0.4		1258	0.4		1530	0.5		1454	0.2		0936	1.0
	1826	1.2		1409	0.7		1900	1.3		2019	1.1		2009	1.3		1354	0.6
	2239	0.5		1536	0.6		2258	0.6		2339	0.8					2138	1.0
				1954	1.1												
				2256	0.9												
08	0226	1.1	23	0200	1.2	08	0234	1.1	23	0251	1.1	08	0011	0.7	23	0126	0.6
	0609	0.8		0554	0.6		0619	0.7		0623	0.7		0319	0.9		0445	0.8
	0808	0.8		0817	0.8		0911	0.9		0919	0.9		0626	0.7		0658	0.8
	1234	0.5		1151	0.5		1432	0.4		1624	0.5		1013	1.1		1026	1.0
	1917	1.2		1408	0.6		1953	1.2		2121	1.1		1554	0.2		1443	0.7
	2304	0.6		1639	0.5		2336	0.7					2106	1.3		1709	0.7
				2102	1.1											1828	0.7
				2321	0.9											2258	1.0
09	0245	1.1	24	0224	1.2	09	0253	1.1	24	0036	0.8	09	0109	0.7	24	0349	0.6
	0641	0.6		0636	0.6		0639	0.6		0323	1.0		0336	0.8		1111	1.1
	0947	0.8		0954	0.9		1017	1.0		0656	0.7		0639	0.6		1539	0.7
	1502	0.5		1730	0.5		1541	0.3		1021	1.0		1058	1.2		1726	0.7
	2019	1.1		2243	1.1		2051	1.2		1717	0.5		1654	0.3		1943	0.7
	2343	0.8								2243	1.1		2211	1.3			
10	0258	1.1	25	0004	1.0	10	0023	0.8	25	0704	0.7	10	0654	0.5	25	0009	1.1
	0700	0.6		0239	1.1		0300	1.0		1109	1.1		1139	1.2		0534	0.4
	1100	0.9		0704	0.6		0653	0.6		1813	0.5		1800	0.3		1156	1.2
	1630	0.4		1100	1.0		1106	1.1		2354	1.1		2323	1.3		2024	0.7
	2138	1.1		1815	0.4		1639	0.2									
							2158	1.2									
11	0026	0.9	26	0008	1.2	11	0702	0.5	26	0613	0.6	11	0709	0.5	26	0106	1.2

0300	1.1	0723	0.5	1147	1.2	1154	1.2	1224	1.3	0617	0.2
0717	0.5	1151	1.1	1734	0.2	1851	0.5	1913	0.3	1239	1.2
1153	1.1	1856	0.4	2306	1.3					2054	0.6
1726	0.2										
2300	1.2										
12 0736	0.4	27 0049	1.3	12 0711	0.4	27 0049	1.2	12 0030	1.3	27 0153	1.3
1232	1.2	0709	0.5	1221	1.3	0600	0.4	0732	0.4	0700	0.1
1811	0.1	1228	1.2	1824	0.1	1230	1.2	1317	1.4	1323	1.3
		1926	0.4			1923	0.5	2026	0.3	2113	0.6
13 0004	1.3	28 0123	1.4	13 0008	1.4	28 0130	1.3	13 0126	1.3	28 0230	1.3
0749	0.4	0641	0.4	0723	0.4	0632	0.2	0749	0.3	0739	0.0
1308	1.3	1306	1.3	1302	1.4	1306	1.3	1417	1.4	1411	1.3
1858	0.0	1941	0.4	1917	0.1	1921	0.5	2132	0.4	2111	0.6
14 0054	1.5	29 0158	1.4	14 0100	1.4	29 0208	1.4	14 0215	1.3	29 0304	1.3
0756	0.4	0658	0.2	0726	0.3	0708	0.1	0813	0.3	0817	0.0
1347	1.4	1345	1.4	1347	1.4	1351	1.3	1517	1.5	1500	1.4
1941	-0.1	1947	0.4	2011	0.1	1938	0.5	2228	0.5	2056	0.6
15 0134	1.6	30 0236	1.5	15 0149	1.5	30 0247	1.4	15 0302	1.3	30 0343	1.3
0753	0.3	0726	0.1	0726	0.3	0747	0.0	0832	0.2	0900	0.0
1424	1.5	1419	1.4	1436	1.5	1432	1.4	1611	1.5	1547	1.4
2021	-0.1	2000	0.4	2102	0.2	2004	0.5	2317	0.6	2104	0.5
						31 0319	1.3				
						0824	0.0				
						1515	1.4				
						2028	0.5				

2026

CANANEIA - BASE SUL DO IOUSP

2026

LATITUDE 25 1.0 S			LONGITUDE 47 55.5 W			FUSO + 3 HORAS											
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703					
JULHO						AGOSTO						SETEMBRO					
HORA			HORA			HORA			HORA			HORA			HORA		
ALT			ALT			ALT			ALT			ALT			ALT		
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0415	1.3	16	0413	1.3	01	0502	1.3	16	0445	1.3	01	0536	1.2	16	0521	1.2
	0945	0.0		1028	0.2		1053	0.0		1004	0.3		1117	0.3		1013	0.4
	1624	1.5		1721	1.5		1711	1.6		1809	1.3		1802	1.3		1415	1.0
	2123	0.5		2143	0.5		2200	0.3		2224	0.2		2230	0.2		1645	0.9
																1902	1.0
																2321	0.3
02	0451	1.2	17	0453	1.2	02	0530	1.2	17	0441	1.2	02	0628	1.1	17	0613	1.1
	1030	0.0		1028	0.3		1134	0.1		1024	0.4		1136	0.5		1045	0.5
	1702	1.5		1800	1.5		1751	1.5		1851	1.2		1849	1.2		1439	1.1
	2149	0.4		2208	0.4		2226	0.3		2302	0.2		2300	0.3		1756	0.8
																2000	0.9
03	0526	1.1	18	0519	1.2	03	0456	1.1	18	0409	1.1	03	0317	1.0	18	0006	0.4
	1119	0.1		1051	0.3		0553	1.1		1054	0.5		0519	0.9		0730	1.0
	1739	1.5		1839	1.4		1217	0.2		1458	0.9		0756	1.0		1111	0.7
	2213	0.4		2245	0.3		1826	1.5		1621	0.9		1149	0.7		1458	1.1
							2256	0.3		1932	1.1		1400	0.8		1847	0.7
										2341	0.3		1621	0.7		2124	0.8
													1943	1.0			
													2332	0.4			
04	0306	1.1	19	0306	1.1	04	0334	1.1	19	0424	1.0	04	0311	0.9	19	0139	0.6
	0449	1.0		1115	0.4		0553	1.0		1121	0.6		0556	0.7		0856	1.0
	0611	1.1		1913	1.2		0704	1.0		1509	1.0		0932	1.0		1154	0.8
	1213	0.1		2317	0.3		1308	0.4		1754	0.8		1158	0.9		1511	1.1
	1813	1.5					1908	1.3		2021	0.9		1400	1.0		1917	0.6
	2247	0.4					2324	0.3					1756	0.6		2309	0.9
													2054	0.9			
05	0308	1.1	20	0334	1.1	05	0339	1.0	20	0023	0.5	05	0006	0.6	20	0511	0.4
	0541	1.0		1151	0.5		0600	0.9		0815	0.9		0306	0.8		1013	1.0
	0715	1.0		1958	1.1		0828	1.0		1158	0.7		0623	0.5		1247	0.9
	1308	0.2					1445	0.6		1534	1.0		1408	1.1		1519	1.1
	1856	1.5					2000	1.2		1858	0.7		1858	0.5		1947	0.5
	2315	0.4								2145	0.9		2236	0.9			
06	0323	1.0	21	0000	0.4	06	0000	0.4	21	0145	0.6	06	0104	0.8	21	0017	1.1
	0600	0.9		0406	1.0		0345	0.9		0947	1.0		0247	0.8		0554	0.2
	0821	1.0		0658	0.9		0615	0.8		1241	0.8		0656	0.3		1126	1.2
	1406	0.3		0809	0.9		0949	1.0		1551	1.0		1326	1.2		2004	0.5
	1939	1.4		1224	0.6		1709	0.6		1943	0.7		1947	0.5			
	2354	0.5		1602	0.8		2102	1.0		2326	0.9						
				1734	0.8												
				2054	1.0												
07	0343	1.0	22	0054	0.5	07	0043	0.6	22	0541	0.5	07	0017	1.0	22	0100	1.2
	0609	0.8		0451	0.9		0347	0.8		1058	1.0		0726	0.1		0630	0.1
	0921	1.0		0647	0.8		0645	0.6		1343	0.9		1332	1.4		1219	1.3
	1513	0.4		0932	0.9		1104	1.1		1554	1.0		2019	0.4		2021	0.5
	2028	1.3		1306	0.7		1847	0.6		2009	0.6						
				1617	0.9		2232	0.9									
				1858	0.8												
				2208	0.9												
08	0036	0.6	23	0224	0.6	08	0147	0.7	23	0041	1.1	08	0109	1.2	23	0136	1.4
	0356	0.9		1034	1.0		0328	0.8		0615	0.3		0758	0.0		0704	-0.1
	0624	0.7		1400	0.8		0709	0.4		1200	1.2		1402	1.5		1304	1.4
	1015	1.1		1638	0.9		1223	1.2		2038	0.5		2047	0.4		2030	0.4
	1636	0.4		1954	0.7		1953	0.5									
	2132	1.1		2347	1.0												
09	0124	0.6	24	0538	0.5	09	0009	1.0	24	0123	1.2	09	0149	1.3	24	0206	1.5
	0400	0.8		1124	1.1		0745	0.2		0653	0.1		0828	0.0		0739	-0.1
	0651	0.6		1508	0.9		1330	1.3		1253	1.3		1438	1.5		1345	1.5
	1108	1.2		1639	0.9		2043	0.4		2056	0.5		2043	0.4		2028	0.4
	1809	0.5		2028	0.6												
	2251	1.1															
10	0711	0.5	25	0053	1.1	10	0115	1.1	25	0200	1.4	10	0221	1.4	25	0241	1.5
	1208	1.2		0619	0.3		0815	0.1		0724	0.0		0851	0.1		0811	-0.2
	1939	0.4		1215	1.2		1419	1.4		1336	1.4		1513	1.5		1421	1.6

			2058	0.6		2121	0.4		2108	0.5		2024	0.4		2021	0.3	
11	0009	1.1	26	0139	1.2	11	0202	1.3	26	0236	1.5	11	0256	1.5	26	0311	1.6
	0749	0.3		0658	0.1		0853	0.0		0800	-0.1		0858	0.1		0847	-0.1
	1311	1.3		1306	1.3		1502	1.5		1417	1.5		1553	1.5		1500	1.6
	2047	0.4		2117	0.6		2147	0.5		2108	0.4		2038	0.2		2026	0.3
12	0117	1.2	27	0217	1.3	12	0245	1.4	27	0308	1.5	12	0326	1.5	27	0345	1.5
	0821	0.2		0736	0.0		0923	0.0		0834	-0.2		0858	0.2		0917	0.0
	1417	1.4		1358	1.3		1543	1.6		1456	1.5		1630	1.5		1541	1.6
	2139	0.4		2132	0.5		2126	0.5		2054	0.4		2104	0.1		2047	0.2
13	0208	1.2	28	0254	1.4	13	0317	1.4	28	0341	1.5	13	0356	1.5	28	0413	1.5
	0900	0.2		0811	-0.1		0943	0.1		0908	-0.2		0908	0.3		0947	0.1
	1513	1.5		1445	1.4		1619	1.6		1534	1.6		1706	1.4		1617	1.5
	2221	0.5		2128	0.5		2106	0.4		2058	0.3		2138	0.1		2109	0.2
14	0256	1.3	29	0328	1.4	14	0354	1.4	29	0409	1.5	14	0421	1.4	29	0451	1.4
	0939	0.1		0853	-0.1		0941	0.2		0945	-0.1		0924	0.3		1009	0.3
	1602	1.5		1524	1.5		1658	1.5		1608	1.6		1747	1.3		1700	1.3
	2241	0.6		2113	0.5		2123	0.3		2113	0.2		2208	0.1		2139	0.2
15	0338	1.3	30	0402	1.4	15	0421	1.4	30	0439	1.4	15	0447	1.3	30	0532	1.3
	1019	0.1		0930	-0.1		0949	0.2		1017	0.0		0951	0.4		1024	0.5
	1645	1.6		1602	1.5		1736	1.4		1649	1.6		1408	0.9		1745	1.2
	2132	0.6		2119	0.4		2156	0.2		2139	0.2		1500	0.9		2206	0.2
													1821	1.1			
													2247	0.2			
			31	0436	1.3				31	0504	1.3						
				1009	-0.1					1051	0.1						
				1639	1.6					1723	1.5						
				2138	0.3					2202	0.2						

2026

CANANEIA - BASE SUL DO IOUSP

2026

LATITUDE 25 1.0 S						LONGITUDE 47 55.5 W						FUSO + 3 HORAS									
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703									
OUTUBRO						NOVEMBRO						DEZEMBRO									
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT			
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA			
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	
01	0626	1.2	16	0604	1.2	01	0158	0.6	16	0153	0.4	01	0426	0.5	16	0217	0.3				
	1041	0.7		1019	0.5		0409	0.5		0736	1.2		0900	1.1		0753	1.3				
	1341	0.8		1411	1.1		0838	1.1		1124	0.7		1211	0.8		1202	0.6				
	1526	0.8		1745	0.8		1111	0.9		1456	1.0		1521	1.0		1545	0.9				
	1834	1.0		1945	0.9		1406	1.1		1826	0.7		1836	0.8		1817	0.8				
	2241	0.3					1800	0.7		2145	0.9		2138	1.0		2138	1.0				
							2056	0.9													
02	0256	0.8	17	0006	0.4	02	0508	0.4	17	0321	0.3	02	0532	0.5	17	0328	0.3				
	0404	0.8		0702	1.1		0956	1.1		0836	1.2		1004	1.0		0849	1.3				
	0743	1.1		1054	0.6		1206	1.0		1215	0.8		1328	0.8		1256	0.6				
	1056	0.8		1438	1.1		1438	1.1		1511	1.0		1608	0.9		1604	0.9				
	1345	1.0		1823	0.7		1845	0.6		1849	0.7		1900	0.8		1830	0.8				
	1700	0.7		2104	0.8		2215	0.9		2245	1.0		2243	1.0		2230	1.1				
	1936	0.9																			
	2311	0.5																			
03	0239	0.8	18	0230	0.5	03	0558	0.3	18	0423	0.3	03	0628	0.5	18	0438	0.3				
	0506	0.6		0808	1.1		1111	1.1		0938	1.2		1111	1.1		0949	1.2				
	0908	1.0		1132	0.8		1909	0.6		1334	0.8		1536	0.7		1402	0.7				
	1106	1.0		1456	1.1		2323	1.1		1521	0.9		1711	0.7		1615	0.7				
	1400	1.1		1854	0.6					1858	0.6		1854	0.7		1843	0.7				
	1804	0.6		2238	0.9					2330	1.1		2336	1.1		2321	1.2				
	2058	0.8																			
04	0000	0.6	19	0421	0.4	04	0639	0.3	19	0515	0.2	04	0713	0.5	19	0543	0.3				
	0224	0.7		0923	1.1		1208	1.2		1039	1.3		1211	1.1		1053	1.2				
	0554	0.4		1223	0.9		1919	0.6		1904	0.6		1717	0.5		1858	0.6				
	1409	1.2		1504	1.0																
	1854	0.5		1913	0.6																
	2243	0.9		2339	1.1																
05	0628	0.3	20	0513	0.2	05	0009	1.2	20	0009	1.3	05	0017	1.2	20	0011	1.3				
	1236	1.2		1036	1.2		0711	0.3		0604	0.1		0749	0.5		0649	0.3				
	1928	0.5		1932	0.5		1254	1.3		1136	1.3		1304	1.2		1156	1.2				
							1838	0.5		1909	0.5		1808	0.3		1926	0.5				
06	0000	1.1	21	0021	1.2	06	0053	1.3	21	0051	1.4	06	0100	1.3	21	0104	1.4				
	0702	0.2		0556	0.1		0736	0.3		0651	0.1		0741	0.5		0751	0.3				
	1258	1.3		1134	1.3		1336	1.3		1226	1.4		1353	1.3		1256	1.3				
	1953	0.5		1943	0.5		1841	0.3		1917	0.4		1854	0.2		2000	0.4				
07	0047	1.2	22	0058	1.3	07	0126	1.4	22	0130	1.4	07	0139	1.3	22	0158	1.4				
	0736	0.1		0636	0.0		0736	0.4		0738	0.1		0724	0.5		0853	0.3				
	1330	1.4		1221	1.4		1413	1.4		1315	1.4		1436	1.3		1353	1.3				
	1953	0.5		1949	0.4		1909	0.2		1928	0.3		1938	0.1		2041	0.3				
08	0121	1.4	23	0132	1.4	08	0202	1.4	23	0211	1.5	08	0215	1.4	23	0253	1.5				
	0800	0.1		0711	-0.1		0736	0.4		0823	0.2		0741	0.5		0949	0.4				
	1406	1.4		1304	1.5		1456	1.4		1404	1.4		1513	1.3		1447	1.3				
	1932	0.4		1945	0.4		1951	0.1		1947	0.3		2017	0.0		2124	0.2				
09	0158	1.4	24	0204	1.5	09	0238	1.5	24	0258	1.5	09	0258	1.4	24	0343	1.5				
	0813	0.2		0751	-0.1		0753	0.4		0908	0.3		0806	0.5		1041	0.5				
	1445	1.5		1349	1.5		1536	1.3		1456	1.3		1556	1.3		1536	1.3				
	1943	0.3		1943	0.3		2026	0.0		2017	0.3		2102	0.0		2209	0.2				
10	0228	1.5	25	0241	1.5	10	0309	1.5	25	0349	1.5	10	0338	1.4	25	0428	1.5				
	0813	0.2		0824	0.0		0811	0.4		0934	0.5		0836	0.5		1008	0.6				
	1521	1.5		1430	1.5		1611	1.3		1545	1.3		1636	1.2		1619	1.2				
	2009	0.1		1958	0.2		2106	0.0		2051	0.2		2147	0.0		2241	0.2				
11	0300	1.5	26	0315	1.5	11	0351	1.4	26	0438	1.5	11	0415	1.5	26	0511	1.5				
	0819	0.3		0858	0.1		0841	0.4		0928	0.6		0904	0.5		0938	0.6				
	1600	1.4		1511	1.5		1654	1.2		1632	1.2		1709	1.2		1704	1.2				
	2045	0.1		2019	0.2		2149	0.1		2128	0.3		2228	0.1		2308	0.2				
12	0332	1.5	27	0358	1.5	12	0428	1.4	27	0524	1.4	12	0456	1.4	27	0558	1.4				
	0838	0.3		0923	0.3		0906	0.4		0943	0.7		0936	0.5		1000	0.6				
	1641	1.3		1558	1.4		1445	1.0		1215	0.8		1754	1.1		1753	1.1				
	2117	0.0		2051	0.2		1734	1.1		1354	0.8		2313	0.1		2315	0.3				
							2228	0.2		1719	1.1										
										2211	0.3										
13	0402	1.4	28	0443	1.4	13	0508	1.4	28	0613	1.4	13	0538	1.4	28	0643	1.3				

0900	0.3	0941	0.5	0939	0.5	1004	0.7	1006	0.5	1036	0.5						
1715	1.2	1645	1.2	1349	1.0	1302	1.0	1423	1.0	1421	1.0						
2158	0.1	2119	0.2	1609	0.9	1528	0.8	1636	1.0	1611	1.0						
				1815	1.0	1809	1.0	1841	1.0	1838	1.1						
				2315	0.2	2300	0.4			2339	0.4						
14	0439	1.4	29	0530	1.3	14	0554	1.3	29	0704	1.3	14	0006	0.2	29	0726	1.2
	0923	0.4		0956	0.6		1008	0.5		1043	0.7		0615	1.4		1111	0.5
	1343	1.0		1354	0.8		1406	1.1		1353	1.1		1043	0.5		1506	1.1
	1506	0.9		1732	1.1		1715	0.9		1651	0.8		1451	1.0		1743	1.0
	1756	1.1		2158	0.3		1913	0.9		1909	1.0		1724	0.9		1928	1.0
	2234	0.2											1938	1.0			
15	0517	1.3	30	0623	1.2	15	0019	0.3	30	0000	0.5	15	0108	0.3	30	0008	0.5
	0953	0.4		1009	0.7		0643	1.2		0147	0.5		0702	1.3		0354	0.6
	1356	1.0		1304	0.9		1047	0.6		0308	0.5		1117	0.5		0813	1.1
	1641	0.9		1551	0.8		1432	1.1		0800	1.2		1513	1.0		1200	0.5
	1843	1.0		1823	1.0		1800	0.8		1119	0.7		1800	0.9		1556	1.1
	2311	0.3		2236	0.4		2028	0.9		1438	1.1		2039	1.0		1836	0.9
										1753	0.8					2036	1.0
										2021	0.9						
			31	0724	1.1										31	0051	0.6
				1043	0.8											0313	0.7
				1338	1.1											0536	0.6
				1702	0.7											0913	1.0
				1932	0.9											1256	0.6
				2321	0.5											1647	0.9
																1900	0.9
																2149	1.0

2027

UBATUBA - BASE NORTE DO IOUSP

2027

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS											
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613											
JANEIRO						FEVEREIRO						MARCO											
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT							
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M				
01	0356	0.5	16	0300	0.4	01	0108	0.9	16	0039	1.1	01	0017	0.8	16	0354	0.7						
	0738	0.7		0711	0.8		0626	0.6		0547	0.6		0323	0.7		0504	0.7						
	1002	0.7		0913	0.7		1206	0.8		0709	0.6		1002	0.6		0828	0.6						
	1154	0.7		1036	0.7		1745	0.3		1239	0.8		1139	0.7		1139	0.7						
	1549	0.5		1515	0.4					1743	0.3		1558	0.4		1609	0.3						
	2036	0.8		2338	0.9																		
	2241	0.8																					
02	0038	0.8	17	0406	0.5	02	0132	0.9	17	0121	1.2	02	0045	0.9	17	0019	1.1						
	0506	0.5		1151	0.8		0713	0.6		0709	0.5		0709	0.6		0802	0.6						
	0904	0.7		1634	0.4		1217	0.9		1313	0.9		1158	0.8		1217	0.8						
	1058	0.7					1841	0.2		1849	0.1		1713	0.3		1734	0.2						
	1209	0.7																					
	1704	0.4																					
03	0109	0.9	18	0043	1.0	03	0147	1.0	18	0204	1.3	03	0102	1.0	18	0102	1.2						
	0613	0.5		0526	0.5		0749	0.5		0745	0.4		0719	0.5		0700	0.5						
	1049	0.8		1243	0.8		1243	0.9		1345	1.0		1221	0.8		1254	0.9						
	1808	0.3		1749	0.3		1924	0.1		1939	0.0		1813	0.2		1834	0.1						
04	0138	0.9	19	0134	1.1	04	0154	1.1	19	0247	1.3	04	0119	1.0	19	0143	1.2						
	0706	0.5		0647	0.4		0817	0.4		0815	0.4		0734	0.5		0717	0.4						
	1151	0.9		1323	0.9		1313	1.0		1358	1.0		1238	0.9		1315	1.0						
	1900	0.2		1854	0.1		2006	0.0		2024	-0.1		1900	0.1		1921	0.0						
05	0141	1.0	20	0219	1.2	05	0206	1.1	20	0317	1.2	05	0132	1.1	20	0215	1.2						
	0753	0.5		0749	0.4		0845	0.4		0849	0.3		0749	0.4		0747	0.3						
	1236	1.0		1356	0.9		1349	1.1		1358	1.1		1304	1.0		1324	1.1						
	1945	0.1		1951	0.0		2049	0.0		2108	-0.1		1945	0.0		2004	-0.1						
06	0145	1.0	21	0304	1.3	06	0223	1.2	21	0341	1.1	06	0139	1.1	21	0243	1.1						
	0832	0.4		0836	0.4		0909	0.3		0919	0.3		0809	0.3		0815	0.3						
	1315	1.0		1415	0.9		1419	1.1		1411	1.2		1330	1.1		1324	1.2						
	2026	0.0		2041	-0.1		2128	0.0		2154	-0.1		2023	0.0		2051	-0.1						
07	0211	1.1	22	0349	1.2	07	0247	1.2	22	0306	1.0	07	0156	1.2	22	0230	1.0						
	0904	0.4		0913	0.4		0939	0.3		0953	0.3		0838	0.3		0849	0.2						
	1356	1.0		1417	1.0		1453	1.2		1441	1.3		1358	1.2		1347	1.3						
	2106	0.0		2126	-0.1		2204	0.0		2236	0.0		2100	-0.1		2130	0.0						
08	0238	1.1	23	0426	1.2	08	0313	1.2	23	0306	1.0	08	0217	1.2	23	0211	1.0						
	0938	0.4		0953	0.4		1006	0.3		1023	0.3		0906	0.2		0921	0.2						
	1434	1.1		1430	1.1		1519	1.2		1509	1.3		1424	1.2		1415	1.3						
	2149	0.0		2211	-0.1		2245	0.0		2313	0.1		2139	0.0		2206	0.1						
09	0309	1.1	24	0443	1.0	09	0343	1.1	24	0332	1.0	09	0243	1.2	24	0232	1.0						
	1006	0.4		1024	0.4		1038	0.3		1056	0.3		0938	0.2		0956	0.2						
	1508	1.1		1500	1.2		1549	1.2		1551	1.2		1454	1.3		1453	1.3						
	2228	0.0		2258	-0.1		2319	0.1		2354	0.3		2213	0.0		2247	0.3						
10	0341	1.1	25	0347	1.0	10	0409	1.1	25	0402	1.0	10	0308	1.2	25	0302	1.0						
	1038	0.4		1058	0.4		1108	0.3		1134	0.3		1008	0.2		1034	0.2						
	1543	1.1		1534	1.2		1611	1.1		1624	1.1		1519	1.2		1526	1.2						
	2308	0.1		2347	0.1		2356	0.2					2251	0.1		2319	0.4						
11	0413	1.1	26	0406	0.9	11	0438	1.0	26	0030	0.5	11	0334	1.1	26	0334	1.0						
	1106	0.4		1132	0.4		1147	0.4		0434	0.9		1041	0.2		1113	0.3						
	1611	1.1		1608	1.2		1641	1.1		1221	0.4		1549	1.2		1604	1.1						
	2351	0.1								1704	1.0		2326	0.3		2351	0.5						
										2106	0.6												
										2247	0.7												
12	0445	1.0	27	0028	0.2	12	0038	0.3	27	0104	0.6	12	0400	1.0	27	0402	1.0						
	1143	0.4		0436	0.9		0504	1.0		0500	0.9		1121	0.3		1200	0.3						
	1641	1.0		1204	0.4		1236	0.4		1321	0.4		1613	1.1		1651	1.0						
				1653	1.1		1709	1.0		1754	0.8					2041	0.7						
										2102	0.7					2200	0.7						
										2351	0.7												
13	0034	0.2	28	0109	0.4	13	0124	0.4	28	0158	0.7	13	0006	0.4	28	0021	0.7						
	0517	1.0		0506	0.9		0528	0.9		0521	0.8		0419	1.0		0426	0.9						
	1221	0.5		1253	0.5		1338	0.4		1002	0.6		1209	0.3		1300	0.3						
	1708	1.0		1734	1.0		1754	0.8		1058	0.6		1653	1.0		1734	0.8						
							2034	0.7		1438	0.4					2034	0.7						
							2224	0.8		1902	0.7					2302	0.8						

2027

UBATUBA - BASE NORTE DO IOUSP

2027

LATITUDE 23 30.0 S			LONGITUDE 45 7.3 W			FUSO + 3 HORAS											
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
ABRIL						MAIO						JUNHO					
HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0023	0.9	16	0041	1.1	01	0002	1.0	16	0053	0.9	01	0006	1.0	16	0700	0.2
	0658	0.5		0606	0.5		0528	0.5		0551	0.4		0606	0.3		1321	1.0
	1153	0.8		1221	0.9		1143	0.9		1213	1.0		1236	1.0		1953	0.4
	1741	0.2		1808	0.1		1751	0.2		1836	0.2		1847	0.2			
02	0045	1.0	17	0113	1.1	02	0021	1.0	17	0113	0.9	02	0028	1.0	17	0021	0.9
	0651	0.5		0638	0.4		0608	0.4		0638	0.3		0656	0.2		0749	0.1
	1217	1.0		1241	1.0		1211	1.0		1211	1.0		1321	1.1		1323	1.0
	1828	0.2		1900	0.1		1836	0.1		1921	0.2		1934	0.2		2034	0.4
03	0058	1.1	18	0147	1.0	03	0034	1.0	18	0036	0.9	03	0053	1.0	18	0102	1.0
	0704	0.4		0708	0.3		0647	0.3		0719	0.2		0747	0.1		0830	0.1
	1241	1.1		1239	1.1		1241	1.1		1230	1.1		1408	1.1		1354	1.1
	1909	0.1		1945	0.0		1917	0.1		2004	0.3		2023	0.3		2109	0.4
04	0109	1.1	19	0153	1.0	04	0051	1.1	19	0039	1.0	04	0119	1.0	19	0145	1.0
	0728	0.3		0745	0.2		0724	0.2		0800	0.1		0836	0.0		0909	0.0
	1306	1.1		1254	1.2		1309	1.2		1308	1.1		1451	1.1		1428	1.1
	1954	0.0		2024	0.1		2000	0.1		2047	0.3		2111	0.3		2147	0.4
05	0124	1.1	20	0121	1.0	05	0113	1.1	20	0111	1.0	05	0149	1.0	20	0223	1.1
	0800	0.2		0821	0.2		0804	0.1		0845	0.1		0923	0.0		0953	0.0
	1332	1.2		1321	1.2		1339	1.2		1349	1.1		1551	1.1		1508	1.1
	2032	0.0		2104	0.2		2043	0.1		2124	0.4		2200	0.4		2215	0.4
06	0145	1.2	21	0136	1.0	06	0138	1.1	21	0151	1.0	06	0219	1.0	21	0304	1.0
	0836	0.2		0858	0.1		0849	0.1		0924	0.1		1013	0.0		1034	0.0
	1358	1.2		1358	1.2		1413	1.2		1426	1.1		1719	1.1		1545	1.1
	2108	0.0		2145	0.3		2124	0.2		2200	0.4		2251	0.4		2247	0.5
07	0208	1.0	22	0204	1.1	07	0204	1.1	22	0224	1.0	07	0256	1.0	22	0343	1.0
	0908	0.1		0939	0.1		0932	0.1		1004	0.1		1106	0.0		1113	0.1
	1426	1.3		1436	1.2		1445	1.2		1508	1.1		1839	1.0		1619	1.0
	2149	0.1		2219	0.4		2208	0.3		2234	0.5		2339	0.5		2315	0.5
08	0234	1.1	23	0241	1.1	08	0232	1.0	23	0304	1.0	08	0332	0.9	23	0417	1.0
	0947	0.1		1017	0.1		1017	0.1		1049	0.1		1200	0.1		1158	0.2
	1456	1.2		1511	1.1		1521	1.1		1553	1.1		1956	1.0		1658	1.0
	2224	0.2		2253	0.5		2258	0.4		2304	0.5					2354	0.5
09	0300	1.1	24	0311	1.0	09	0300	1.0	24	0343	1.0	09	0023	0.6	24	0453	0.9
	1024	0.2		1100	0.2		1108	0.1		1134	0.2		0411	0.9		1247	0.2
	1524	1.1		1556	1.0		1604	1.0		1632	1.0		1258	0.1		1734	0.9
	2304	0.4		2323	0.6		1845	0.9		2341	0.6		2104	0.9			
							2351	0.5									
10	0323	1.0	25	0347	1.0	10	0328	0.9	25	0415	0.9	10	0108	0.6	25	0038	0.5
	1109	0.2		1149	0.2		1206	0.2		1219	0.2		0502	0.9		0523	0.9
	1600	1.0		1639	0.9		1649	0.9		1715	0.9		1358	0.2		1334	0.3
	2354	0.5		2358	0.6		1758	0.9					1817	0.7		1817	0.9
							2034	0.9					1900	0.7			
													2208	0.8			
11	0351	0.9	26	0408	0.9	11	0049	0.6	26	0021	0.6	11	0200	0.6	26	0126	0.5
	1206	0.3		1241	0.3		0402	0.9		0449	0.8		0600	0.9		0604	0.9
	1641	0.9		1723	0.9		1309	0.2		1311	0.3		1500	0.3		1421	0.3
	1900	0.8		2143	0.8		2147	1.0		1809	0.9		1954	0.7		1909	0.8
	2056	0.9											2306	0.8			
12	0054	0.6	27	0051	0.7	12	0151	0.7	27	0111	0.6	12	0256	0.6	27	0223	0.5
	0408	0.9		0417	0.8		0451	0.8		0524	0.8		0713	0.8		0713	0.8
	1315	0.3		1343	0.3		1419	0.3		1408	0.3		1604	0.4		1515	0.4
	1856	0.7		1832	0.8		2243	1.0		2130	0.8		2356	0.8		2117	0.8
	2211	0.9		2000	0.8												
				2236	0.8												
13	0204	0.7	28	0156	0.7	13	0256	0.6	28	0209	0.6	13	0400	0.5	28	0324	0.5
	0438	0.8		0419	0.7		0558	0.7		0834	0.8		0856	0.8		1047	0.8
	0806	0.6		1451	0.4		0806	0.7		1508	0.3		1013	0.8		1611	0.4
	1011	0.6		2306	0.9		1024	0.7		2236	0.8		1156	0.8		2311	0.8
	1439	0.3					1534	0.3					1709	0.4			
	2308	1.0					2330	1.0									
14	0456	0.7	29	0309	0.7	14	0402	0.6	29	0313	0.5	14	0034	0.8	29	0432	0.4
	0800	0.6		0453	0.7		1113	0.8		1006	0.8		0508	0.4		1204	0.9
	1108	0.7		0638	0.7		1643	0.2		1606	0.3		1247	0.9		1713	0.4

1600	0.3	1023	0.7	2311	0.9	1809	0.4										
2358	1.1	1558	0.3														
		2339	0.9														
15	0549	0.6	30	0436	0.6	15	0011	1.0	30	0415	0.5	15	0051	0.8	30	0002	0.9
	1153	0.8		1111	0.8		0500	0.5		1106	0.9		0608	0.3		0538	0.3
	1709	0.2		1658	0.3		1153	0.9		1702	0.3		1319	0.9		1302	1.0
							1743	0.2		2339	0.9		1902	0.4		1817	0.4
													2345	0.9			
										31	0513	0.4					
											1153	1.0					
											1756	0.2					

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UBATUBA - BASE NORTE DO IOUSP

2027

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS								
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613								
OUTUBRO						NOVEMBRO						DEZEMBRO								
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0200	1.3	16	0211	1.2	01	0258	1.1	16	0315	1.1	01	0338	1.1	16	0543	1.1			
	0951	0.1		0926	0.1		1045	0.5		1036	0.4		1058	0.5		1109	0.5			
	1413	1.0		1417	1.1		1456	1.0		1453	1.0		1532	1.0		1523	1.0			
	2139	0.2		2128	0.1		2249	0.1		2249	0.1		2319	0.1		2338	0.0			
02	0232	1.3	17	0243	1.2	02	0341	1.0	17	0356	1.0	02	0417	1.0	17	0656	1.0			
	1030	0.2		1002	0.2		1115	0.6		1123	0.5		1128	0.6		1156	0.5			
	1443	1.0		1445	1.1		1530	1.0		1519	0.9		1609	1.0		1604	1.0			
	2219	0.2		2206	0.1		2336	0.2		2345	0.1									
03	0306	1.2	18	0313	1.2	03	0421	1.0	18	0551	0.9	03	0004	0.2	18	0030	0.1			
	1104	0.4		1045	0.3		1153	0.6		0738	0.9		0502	0.9		0811	0.9			
	1509	1.0		1508	1.0		1604	0.9		1215	0.6		1202	0.6		1241	0.5			
	2300	0.2		2249	0.2					1558	0.9		1654	0.9		1649	1.0			
04	0351	1.1	19	0351	1.1	04	0024	0.3	19	0045	0.2	04	0056	0.3	19	0124	0.2			
	1143	0.5		1130	0.5		0509	0.9		0858	1.0		0549	0.9		0654	0.8			
	1545	1.0		1536	1.0		1232	0.7		1309	0.6		1253	0.6		0926	0.8			
	2349	0.3		2343	0.2		1636	0.8		1638	0.8		1743	0.8		1326	0.6			
																1734	0.9			
05	0428	1.0	20	0424	0.9	05	0121	0.3	20	0151	0.2	05	0151	0.3	20	0223	0.3			
	0813	0.7		1223	0.6		0608	0.8		1002	1.0		0645	0.8		0749	0.7			
	0939	0.7		1600	0.9		0815	0.8		1409	0.6		1347	0.6		1038	0.8			
	1213	0.7					1002	0.8		1734	0.8		1909	0.8		1419	0.6			
	1609	0.9					1326	0.7		2013	0.7					1832	0.9			
							1702	0.8												
06	0045	0.3	21	0047	0.3	06	0224	0.4	21	0256	0.2	06	0247	0.3	21	0326	0.4			
	0513	0.9		0509	0.8		1049	0.8		1058	1.0		0819	0.8		0723	0.7			
	0809	0.7		0647	0.8		1438	0.6		1511	0.6		1447	0.5		0824	0.7			
	1051	0.8		0934	0.9		2104	0.7		2238	0.8		2108	0.8		1134	0.8			
	1300	0.7		1328	0.7											1521	0.5			
	1632	0.8		1623	0.8											1953	0.8			
																2158	0.8			
																2341	0.8			
07	0151	0.4	22	0200	0.3	07	0332	0.4	22	0402	0.3	07	0343	0.4	22	0438	0.4			
	0615	0.7		1038	1.0		1117	0.9		1151	1.0		1032	0.8		1215	0.8			
	0811	0.7		1451	0.7		1558	0.6		1615	0.5		1551	0.5		1636	0.5			
	1117	0.8		1658	0.7		2236	0.8		2330	0.9		2236	0.8						
	1406	0.7		1954	0.6															
	1608	0.8		2226	0.7															
08	0300	0.4	23	0315	0.3	08	0434	0.3	23	0506	0.2	08	0438	0.3	23	0043	0.9			
	1149	0.9		1124	1.1		1143	0.9		1232	0.9		1111	0.9		0549	0.4			
	1847	0.6		1621	0.6		1700	0.5		1715	0.5		1651	0.4		1254	0.8			
	2309	0.7		1809	0.6		2321	0.9					2336	0.9		1743	0.4			
				2317	0.8															
09	0415	0.3	24	0436	0.2	09	0526	0.3	24	0013	0.9	09	0530	0.3	24	0128	0.9			
	1206	0.9		1208	1.1		1156	0.9		0606	0.2		1136	0.9		0649	0.4			
	1841	0.6		1724	0.5		1745	0.4		1304	0.9		1745	0.3		1304	0.8			
	2334	0.8		2358	0.9		2354	1.0		1808	0.4					1843	0.2			
10	0519	0.3	25	0539	0.2	10	0613	0.2	25	0039	1.0	10	0024	1.0	25	0202	1.0			
	1228	1.0		1254	1.1		1211	1.0		0700	0.3		0621	0.3		0741	0.4			
	1839	0.5		1804	0.4		1826	0.3		1328	0.9		1206	1.0		1215	0.9			
	2358	0.9								1858	0.3		1838	0.2		1932	0.1			
11	0609	0.2	26	0030	1.0	11	0024	1.1	26	0036	1.0	11	0109	1.0	26	0223	1.0			
	1241	1.0		0632	0.1		0658	0.2		0749	0.3		0711	0.3		0821	0.4			
	1849	0.4		1328	1.1		1230	1.0		1230	0.9		1234	1.0		1249	0.9			
				1843	0.4		1906	0.2		1945	0.2		1926	0.1		2015	0.1			
12	0023	1.0	27	0045	1.1	12	0056	1.1	27	0104	1.1	12	0153	1.1	27	0213	1.0			
	0656	0.1		0719	0.1		0741	0.2		0832	0.3		0802	0.3		0900	0.4			
	1249	1.1		1356	1.0		1254	1.1		1256	1.0		1308	1.0		1328	1.0			
	1913	0.3		1921	0.3		1949	0.1		2028	0.1		2013	0.1		2058	0.0			
13	0049	1.1	28	0047	1.1	13	0126	1.2	28	0136	1.1	13	0241	1.1	28	0224	1.1			
	0736	0.1		0802	0.1		0821	0.2		0911	0.4		0853	0.3		0939	0.4			
	1304	1.1		1330	0.9		1321	1.1		1328	1.0		1339	1.0		1409	1.1			
	1943	0.2		2000	0.2		2030	0.1		2109	0.0		2102	0.0		2141	0.0			
14	0115	1.2	29	0108	1.2	14	0202	1.2	29	0215	1.1	14	0336	1.1	29	0256	1.1			

0811	0.0	0849	0.2	0902	0.2	0953	0.4	0941	0.4	1008	0.4
1324	1.1	1319	1.0	1351	1.1	1408	1.0	1413	1.0	1453	1.1
2015	0.2	2043	0.1	2111	0.1	2154	0.0	2154	0.0	2219	0.0
15 0145	1.2	30 0141	1.2	15 0234	1.1	30 0258	1.1	15 0436	1.1	30 0328	1.1
0851	0.1	0928	0.3	0949	0.3	1026	0.5	1026	0.4	1036	0.4
1353	1.2	1347	1.0	1419	1.0	1453	1.0	1451	1.0	1530	1.1
2053	0.1	2123	0.1	2158	0.1	2238	0.1	2247	0.0	2300	0.1
		31 0215	1.2							31 0404	1.1
		1006	0.4							1102	0.5
		1417	1.0							1608	1.0
		2204	0.1							2346	0.1

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PORTO DE SANTOS - TORRE GRANDE

2027

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
JANEIRO						FEVEREIRO						MARCO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0323	0.6	16	0304	0.5	01	0138	1.0	16	0102	1.3	01	0108	0.9	16	0004	1.2
	0834	0.8		0823	1.0		0843	0.7		0711	0.6		0845	0.7		0708	0.7
	1534	0.5		1413	0.6		1247	1.0		1308	0.9		1151	0.9		1206	0.8
	2153	1.0		2353	1.1		1717	0.3		1815	0.4		1547	0.4		1615	0.5
02	0428	0.6	17	0417	0.5	02	0151	1.1	17	0153	1.4	02	0130	1.0	17	0056	1.3
	1213	0.9		0949	0.9		0815	0.6		0753	0.4		0815	0.6		0717	0.5
	1647	0.4		1630	0.6		1317	1.1		1343	1.1		1219	1.0		1243	1.0
	2326	1.0					1817	0.2		1854	0.2		1653	0.3		1808	0.3
03	0549	0.6	18	0058	1.2	03	0153	1.2	18	0230	1.6	03	0139	1.1	18	0132	1.4
	1256	1.0		0606	0.5		0802	0.5		0819	0.4		0800	0.6		0741	0.4
	1747	0.3		1121	0.9		1353	1.3		1411	1.2		1254	1.2		1309	1.1
				1804	0.4		1906	0.1		1934	0.0		1753	0.2		1839	0.2
04	0030	1.1	19	0156	1.4	04	0204	1.3	19	0304	1.6	04	0139	1.2	19	0204	1.5
	0656	0.6		0730	0.4		0817	0.5		0836	0.3		0758	0.5		0753	0.4
	1332	1.1		1336	1.0		1421	1.3		1432	1.3		1324	1.3		1334	1.3
	1836	0.2		1854	0.2		1949	0.0		2013	-0.1		1843	0.1		1917	0.0
05	0117	1.2	20	0245	1.5	05	0226	1.4	20	0338	1.6	05	0147	1.3	20	0236	1.5
	0741	0.5		0817	0.4		0839	0.4		0849	0.3		0808	0.4		0804	0.3
	1404	1.2		1423	1.1		1453	1.4		1445	1.4		1356	1.4		1349	1.4
	1923	0.1		1941	0.1		2030	0.0		2054	-0.1		1928	0.0		1953	0.0
06	0154	1.3	21	0324	1.6	06	0251	1.4	21	0400	1.5	06	0202	1.4	21	0258	1.5
	0815	0.5		0845	0.4		0902	0.3		0911	0.3		0824	0.3		0817	0.2
	1438	1.3		1443	1.2		1517	1.4		1500	1.4		1426	1.4		1408	1.5
	2008	0.0		2024	0.0		2109	-0.1		2132	-0.1		2008	0.0		2026	0.0
07	0228	1.3	22	0402	1.6	07	0313	1.5	22	0415	1.4	07	0221	1.4	22	0313	1.4
	0849	0.4		0917	0.3		0923	0.3		0936	0.3		0839	0.3		0838	0.2
	1504	1.3		1511	1.3		1543	1.4		1517	1.5		1454	1.5		1426	1.5
	2051	0.0		2111	-0.1		2149	0.0		2211	0.0		2041	-0.1		2104	0.0
08	0302	1.4	23	0439	1.6	08	0341	1.5	23	0421	1.3	08	0243	1.5	23	0323	1.3
	0913	0.4		0938	0.4		0939	0.3		1004	0.3		0854	0.3		0906	0.2
	1534	1.3		1521	1.3		1600	1.4		1543	1.5		1521	1.5		1454	1.5
	2136	0.0		2200	-0.1		2230	0.0		2253	0.2		2121	-0.1		2141	0.1
09	0334	1.4	24	0504	1.4	09	0406	1.5	24	0428	1.2	09	0304	1.5	24	0332	1.3
	0941	0.4		1006	0.4		0958	0.3		1038	0.3		0911	0.2		0939	0.2
	1554	1.3		1543	1.3		1617	1.3		1608	1.4		1541	1.5		1517	1.5
	2221	0.0		2247	0.0		2311	0.1		2330	0.4		2158	0.0		2213	0.3
10	0406	1.4	25	0519	1.3	10	0438	1.4	25	0439	1.1	10	0330	1.5	25	0345	1.2
	1002	0.4		1032	0.4		1019	0.3		1115	0.3		0932	0.2		1019	0.2
	1613	1.2		1604	1.3		1632	1.3		1641	1.3		1602	1.4		1553	1.5
	2304	0.1		2330	0.1		2354	0.2					2238	0.1		2251	0.5
11	0439	1.4	26	0526	1.2	11	0508	1.3	26	0006	0.6	11	0400	1.4	26	0356	1.2
	1021	0.4		1102	0.4		1045	0.4		0451	1.1		0956	0.2		1109	0.3
	1626	1.2		1632	1.3		1653	1.2		1209	0.4		1621	1.3		1623	1.4
	2347	0.1								1713	1.2		2319	0.3		2311	0.6
										2121	0.7						
12	0511	1.4	27	0011	0.3	12	0041	0.3	27	0054	0.7	12	0426	1.3	27	0404	1.1
	1043	0.5		0536	1.1		0543	1.2		0458	1.0		1023	0.3		1209	0.3
	1639	1.1		1138	0.4		1113	0.4		1321	0.4		1645	1.2		1702	1.3
				1700	1.2		1709	1.1		1758	1.1					2104	0.7
										2141	0.7						
13	0030	0.2	28	0058	0.4	13	0138	0.5	28	0039	0.8	13	0006	0.4	28	0411	1.0
	0551	1.3		0547	1.0		0619	1.0		0200	0.8		0458	1.2		1311	0.4
	1109	0.5		1223	0.5		1143	0.5		0502	0.9		1054	0.4		1747	1.1
	1658	1.1		1739	1.2		1726	0.9		0917	0.7		1704	1.1		2123	0.7
							2008	0.9		1106	0.7						
							2249	0.9		1436	0.5						
										1854	0.9						
										2156	0.8						
14	0113	0.3	29	0147	0.6	14	0247	0.6				14	0106	0.6	29	0413	1.0
	0630	1.2		0556	0.9		0709	0.9					0519	1.0		0841	0.7
	1145	0.5		1336	0.5		1351	0.6					1149	0.5		1038	0.7
	1709	1.0		1823	1.0		1754	0.8					1728	0.9		1413	0.4
				2208	0.8		1902	0.8					1943	0.9		1841	1.0

2027

PORTO DE SANTOS - TORRE GRANDE

2027

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
ABRIL						MAIO						JUNHO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0106	1.1	16	0102	1.3	01	0711	0.5	16	0054	1.2	01	0645	0.4	16	0136	1.1
	0732	0.5		0708	0.5		1213	1.2		0624	0.4		1313	1.3		0643	0.2
	1217	1.2		1223	1.2		1723	0.2		1158	1.2		1843	0.3		1249	1.2
	1715	0.3		1809	0.2					1809	0.3					1928	0.5
02	0100	1.2	17	0134	1.4	02	0011	1.2	17	0121	1.2	02	0030	1.2	17	0204	1.2
	0738	0.5		0717	0.4		0724	0.4		0638	0.3		0658	0.3		0723	0.1
	1253	1.3		1241	1.3		1253	1.3		1224	1.3		1408	1.4		1334	1.2
	1813	0.2		1847	0.1		1821	0.2		1858	0.3		1941	0.3		2013	0.5
03	0108	1.3	18	0156	1.4	03	0038	1.3	18	0145	1.2	03	0108	1.2	18	0236	1.2
	0749	0.4		0721	0.3		0728	0.4		0706	0.2		0728	0.2		0806	0.0
	1324	1.4		1306	1.4		1330	1.4		1300	1.3		1502	1.5		1415	1.3
	1858	0.1		1924	0.1		1913	0.1		1939	0.4		2032	0.3		2051	0.5
04	0124	1.4	19	0215	1.3	04	0106	1.3	19	0208	1.2	04	0145	1.2	19	0300	1.3
	0800	0.3		0738	0.2		0732	0.3		0743	0.1		0808	0.1		0854	0.0
	1358	1.5		1328	1.4		1409	1.5		1336	1.4		1558	1.5		1458	1.3
	1938	0.0		2002	0.1		1954	0.1		2019	0.4		2115	0.3		2121	0.5
05	0143	1.4	20	0232	1.3	05	0132	1.4	20	0232	1.2	05	0215	1.2	20	0324	1.3
	0809	0.3		0806	0.1		0751	0.2		0821	0.1		0856	0.1		0941	0.0
	1430	1.5		1358	1.5		1451	1.5		1413	1.4		1651	1.5		1534	1.4
	2019	0.0		2039	0.2		2038	0.1		2058	0.4		2156	0.4		2153	0.5
06	0206	1.4	21	0247	1.3	06	0200	1.4	21	0254	1.2	06	0253	1.2	21	0347	1.2
	0821	0.2		0841	0.1		0817	0.1		0906	0.1		0951	0.1		1032	0.0
	1500	1.5		1428	1.5		1536	1.5		1456	1.4		1739	1.4		1609	1.4
	2054	0.0		2111	0.3		2119	0.2		2132	0.5		2232	0.5		2215	0.5
07	0228	1.4	22	0300	1.2	07	0228	1.3	22	0311	1.2	07	0319	1.1	22	0402	1.2
	0841	0.2		0919	0.1		0856	0.1		0958	0.1		1053	0.1		1121	0.1
	1528	1.5		1502	1.5		1626	1.4		1536	1.4		1823	1.3		1649	1.4
	2134	0.1		2151	0.4		2200	0.3		2202	0.5		2308	0.6		2238	0.5
08	0258	1.4	23	0313	1.2	08	0300	1.3	23	0328	1.2	08	0354	1.1	23	0415	1.1
	0908	0.2		1008	0.1		0943	0.2		1054	0.1		1158	0.2		1206	0.1
	1556	1.4		1539	1.4		1721	1.3		1613	1.3		1904	1.2		1721	1.3
	2213	0.2		2217	0.5		2241	0.5		2230	0.6		2347	0.7		2254	0.5
09	0323	1.3	24	0326	1.2	09	0324	1.2	24	0341	1.1	09	0419	1.0	24	0423	1.1
	0941	0.2		1106	0.2		1041	0.2		1151	0.2		1300	0.2		1253	0.2
	1626	1.3		1615	1.3		1826	1.2		1656	1.3		1945	1.1		1802	1.3
	2254	0.4		2241	0.6		2323	0.6		2247	0.6					2315	0.6
10	0354	1.2	25	0339	1.1	10	0354	1.1	25	0351	1.1	10	0021	0.7	25	0428	1.0
	1021	0.3		1204	0.2		1156	0.3		1239	0.2		0449	0.9		1334	0.3
	1702	1.2		1658	1.3		1941	1.1		1739	1.2		1354	0.3		1845	1.2
	2341	0.6		2123	0.7					2258	0.7		2023	1.0		2347	0.6
11	0413	1.1	26	0351	1.0	11	0011	0.8	26	0358	1.0	11	0113	0.7	26	0430	0.9
	1124	0.4		1300	0.3		0402	1.0		1323	0.2		0939	0.9		0654	0.9
	1809	1.0		1745	1.2		1309	0.3		1824	1.2		1445	0.4		0909	0.9
				2143	0.7		2108	1.1		2324	0.7		2121	0.9		1413	0.3
																1934	1.1
12	0041	0.7	27	0354	1.0	12	0121	0.8	27	0356	0.9	12	0243	0.7	27	0032	0.6
	0430	1.0		0808	0.7		0321	0.9		0654	0.8		1021	1.0		0438	0.8
	1256	0.5		0932	0.8		0719	0.8		0917	0.9		1536	0.4		0643	0.8
	2228	1.0		1354	0.3		0951	0.8		1406	0.3		2332	0.9		1023	1.0
				1838	1.1		1419	0.3		1919	1.1					1502	0.4
				2208	0.8		2241	1.1								2034	1.0
13	0830	0.7	28	0328	0.9	13	0617	0.7	28	0015	0.8	13	0419	0.6	28	0211	0.7
	1043	0.7		0713	0.7		1036	0.9		0343	0.8		1049	1.0		0456	0.7
	1426	0.5		1023	0.9		1523	0.3		0639	0.7		1630	0.5		0643	0.7
	2345	1.2		1445	0.3		2345	1.1		1013	1.0					1121	1.1
				1954	1.0					1454	0.3					1600	0.4
				2249	0.9					2028	1.1					2147	1.0
14	0654	0.6	29	0051	0.9	14	0621	0.6	29	0647	0.7	14	0028	1.0	29	0630	0.6
	1123	0.9		0700	0.7		1108	1.0		1100	1.1		0517	0.5		1221	1.2
	1600	0.4		1102	1.0		1623	0.3		1541	0.3		1121	1.1		1711	0.4
				1534	0.3					2147	1.1		1730	0.5		2300	1.0
				2217	1.0												
15	0028	1.3	30	0702	0.6	15	0024	1.1	30	0654	0.6	15	0102	1.0	30	0608	0.5

0656	0.5	1141	1.1	0628	0.5	1143	1.2	0602	0.3	1321	1.3
1154	1.0	1626	0.3	1132	1.1	1634	0.3	1204	1.1	1838	0.4
1717	0.3	2338	1.1	1717	0.3	2256	1.1	1834	0.6		
				31	0654	0.5					
					1226	1.2					
					1738	0.3					
					2350	1.1					

2027

PORTO DE SANTOS - TORRE GRANDE

2027

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
JULHO						AGOSTO						SETEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0017	1.0	16	0200	1.2	01	0238	1.2	16	0238	1.5	01	0249	1.5	16	0302	1.5
	0639	0.3		0709	0.1		0804	0.0		0813	-0.1		0908	-0.1		0900	0.0
	1419	1.4		1411	1.2		1547	1.6		1436	1.4		1604	1.4		1447	1.5
	1949	0.4		2021	0.5		2113	0.3		2054	0.3		2126	0.2		2104	0.2
02	0121	1.1	17	0228	1.3	02	0258	1.3	17	0300	1.5	02	0304	1.5	17	0324	1.5
	0719	0.2		0754	0.0		0847	-0.1		0853	-0.1		0947	0.0		0934	0.0
	1511	1.5		1428	1.3		1619	1.6		1458	1.5		1615	1.3		1509	1.5
	2039	0.3		2045	0.5		2134	0.3		2115	0.3		2154	0.2		2121	0.2
03	0208	1.1	18	0256	1.4	03	0315	1.4	18	0324	1.5	03	0324	1.5	18	0345	1.5
	0806	0.0		0836	-0.1		0930	-0.1		0930	-0.1		1023	0.1		1011	0.1
	1600	1.6		1456	1.4		1651	1.5		1523	1.5		1619	1.2		1539	1.4
	2119	0.3		2109	0.4		2158	0.3		2134	0.3		2223	0.2		2141	0.2
04	0234	1.2	19	0321	1.4	04	0328	1.4	19	0345	1.5	04	0353	1.5	19	0404	1.4
	0854	0.0		0917	-0.1		1015	-0.1		1009	0.0		1102	0.3		1051	0.3
	1645	1.6		1523	1.4		1709	1.4		1551	1.5		1628	1.1		1606	1.3
	2151	0.4		2136	0.4		2221	0.3		2151	0.3		2258	0.3		2206	0.2
05	0308	1.2	20	0345	1.4	05	0351	1.4	20	0400	1.4	05	0417	1.4	20	0423	1.3
	0947	0.0		1002	0.0		1102	0.1		1047	0.1		1143	0.6		1138	0.4
	1721	1.5		1554	1.5		1719	1.2		1615	1.5		1638	1.1		1638	1.2
	2219	0.4		2158	0.4		2249	0.3		2208	0.3		2345	0.3		2238	0.3
06	0334	1.2	21	0402	1.3	06	0409	1.4	21	0415	1.3	06	0453	1.3	21	0447	1.1
	1041	0.0		1045	0.0		1149	0.2		1130	0.2		0856	0.7		1236	0.6
	1754	1.4		1623	1.5		1726	1.1		1649	1.4		1108	0.7		1704	1.1
	2249	0.5		2217	0.4		2315	0.4		2228	0.3		1224	0.7		2319	0.4
													1641	1.0			
07	0400	1.2	22	0417	1.3	07	0439	1.3	22	0432	1.2	07	0053	0.4	22	0504	0.9
	1138	0.1		1130	0.1		1234	0.4		1215	0.3		0528	1.1		0758	0.9
	1817	1.3		1656	1.4		1736	1.0		1717	1.3		0906	0.7		1021	0.9
	2313	0.5		2234	0.4		2351	0.4		2251	0.3		1219	0.9		1354	0.8
													1341	0.9		1723	0.9
													1641	1.0			
													2119	0.6			
													2300	0.7			
08	0426	1.2	23	0428	1.2	08	0506	1.2	23	0449	1.1	08	0206	0.5	23	0109	0.5
	1228	0.2		1211	0.2		1317	0.6		1306	0.5		0617	0.9		0517	0.8
	1834	1.1		1726	1.4		1741	1.0		1753	1.1		0926	0.7		0651	0.7
	2347	0.5		2254	0.4					2317	0.4		1300	1.0		1141	1.1
													1513	0.9		2128	0.7
													1630	0.9		2349	0.7
													2049	0.7			
													2343	0.8			
09	0458	1.1	24	0441	1.1	09	0051	0.5	24	0502	1.0	09	0323	0.4	24	0324	0.5
	1315	0.3		1254	0.3		0549	1.1		0849	0.8		0756	0.8		1224	1.2
	1847	1.0		1802	1.3		0936	0.7		1015	0.9		0921	0.8		1902	0.6
				2317	0.4		1158	0.8		1408	0.6		1317	1.0			
							1411	0.7		1828	1.0		2021	0.7			
							1738	0.9		2328	0.5						
							2209	0.6									
							2324	0.6									
10	0019	0.6	25	0454	1.0	10	0219	0.5	25	0513	0.8	10	0008	1.0	25	0021	0.9
	0534	1.1		1341	0.4		0645	0.9		0741	0.8		0439	0.4		0615	0.4
	1402	0.5		1843	1.1		0953	0.8		1149	1.0		1336	1.1		1304	1.4
	1900	0.9		2347	0.5		1258	0.9		1534	0.7		2011	0.6		1923	0.5
							1526	0.8		1936	0.8						
							1738	0.9		2304	0.7						
							2128	0.7									
11	0117	0.6	26	0504	0.9	11	0008	0.8	26	0039	0.7	11	0041	1.1	26	0053	1.1
	0636	1.0		0800	0.9		0354	0.5		0319	0.6		0541	0.2		0628	0.2
	1456	0.6		0954	0.9		1334	1.0		0536	0.6		1336	1.2		1341	1.5
	1904	0.8		1434	0.5		2100	0.7		0702	0.6		2004	0.5		1945	0.4
				1930	1.0					1243	1.2						
										1900	0.6						
12	0256	0.6	27	0028	0.6	12	0045	1.0	27	0058	0.9	12	0108	1.3	27	0121	1.3

0858	0.9	0519	0.8	0508	0.4	0632	0.4	0632	0.1	0658	0.0						
1015	0.9	0706	0.8	1356	1.1	1324	1.4	1334	1.3	1409	1.5						
1209	0.9	1132	1.0	2053	0.6	1943	0.5	2002	0.4	1956	0.3						
1556	0.7	1539	0.6														
1853	0.8	2043	0.9														
2126	0.8																
13	0021	0.8	28	0345	0.6	13	0109	1.1	28	0128	1.0	13	0141	1.4	28	0139	1.4
	0423	0.5		0647	0.7		0606	0.2		0639	0.2		0713	0.0		0730	-0.1
	1309	1.0		1238	1.1		1404	1.2		1404	1.5		1343	1.3		1439	1.5
	1706	0.7		1715	0.6		2039	0.6		2006	0.4		2015	0.4		2011	0.2
	1853	0.8		2226	0.8												
	2058	0.7															
14	0058	1.0	29	0056	0.8	14	0141	1.3	29	0154	1.2	14	0208	1.5	29	0158	1.5
	0532	0.4		0545	0.5		0654	0.1		0717	0.0		0751	0.0		0806	-0.1
	1351	1.1		1334	1.3		1406	1.2		1445	1.6		1402	1.4		1500	1.4
	2058	0.7		1928	0.5		2024	0.5		2032	0.3		2030	0.3		2028	0.2
15	0130	1.1	30	0139	1.0	15	0206	1.4	30	0223	1.3	15	0238	1.5	30	0215	1.5
	0623	0.2		0636	0.3		0736	0.0		0751	-0.1		0826	-0.1		0841	0.0
	1406	1.1		1419	1.5		1417	1.3		1515	1.6		1421	1.5		1513	1.3
	2030	0.6		2013	0.4		2034	0.4		2047	0.3		2047	0.2		2056	0.1
			31	0211	1.1				31	0236	1.4						
				0719	0.1					0828	-0.2						
				1504	1.6					1545	1.6						
				2045	0.3					2106	0.2						

2027

PORTO DE SANTOS - TORRE GRANDE

2027

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS							
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701							
OUTUBRO						NOVEMBRO						DEZEMBRO							
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT			
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M
01	0239	1.5	16	0309	1.5	01	0319	1.4	16	0445	1.3	01	0358	1.3	16	0551	1.4		
	0915	0.1		0911	0.1		0956	0.5		1015	0.4		1008	0.6		1049	0.5		
	1523	1.2		1436	1.4		1521	1.1		1508	1.2		1553	1.1		1549	1.1		
	2126	0.1		2054	0.2		2251	0.2		2213	0.2		2330	0.1		2323	0.1		
02	0302	1.5	17	0338	1.5	02	0400	1.3	17	0543	1.3	02	0438	1.3	17	0634	1.3		
	0953	0.3		0947	0.2		1019	0.6		1100	0.6		1036	0.6		1123	0.6		
	1536	1.2		1504	1.4		1532	1.1		1543	1.1		1608	1.1		1621	1.1		
	2206	0.2		2124	0.2		2347	0.2		2317	0.2								
03	0334	1.5	18	0406	1.4	03	0439	1.3	18	0654	1.2	03	0017	0.1	18	0023	0.2		
	1021	0.5		1026	0.3		0921	0.7		1149	0.7		0515	1.3		0715	1.2		
	1547	1.1		1534	1.3		1539	1.0		1606	1.0		1051	0.6		1204	0.7		
	2253	0.2		2202	0.2								1617	1.0		1704	1.0		
04	0404	1.4	19	0438	1.2	04	0043	0.2	19	0030	0.3	04	0104	0.2	19	0119	0.3		
	1047	0.6		1111	0.5		0521	1.2		0815	1.1		0602	1.2		0758	1.0		
	1553	1.1		1600	1.2		0919	0.7		1249	0.8		1119	0.7		1253	0.7		
	2351	0.3		2256	0.3		1549	1.0		1621	0.9		1623	0.9		1906	1.0		
05	0443	1.2	20	0523	1.1	05	0136	0.3	20	0145	0.3	05	0153	0.3	20	0213	0.3		
	0841	0.7		1206	0.7		0611	1.1		0941	1.1		0654	1.1		0851	0.9		
	1556	1.0		1623	1.0		0954	0.8		1419	0.8		1208	0.7		1358	0.7		
							1551	0.9		1754	0.8		1621	0.8		2132	1.0		
							1909	0.8		2151	0.9		1813	0.8					
							2153	0.9					2139	0.9					
06	0054	0.3	21	0008	0.4	06	0224	0.3	21	0254	0.3	06	0238	0.3	21	0311	0.4		
	0521	1.1		0934	1.0		0721	1.0		1053	1.1		0756	1.1		1024	0.9		
	0900	0.7		1328	0.8		1028	0.9		1754	0.7		1353	0.7		1519	0.6		
	1558	1.0		1621	0.9		1219	0.9		2238	1.0		1608	0.8		2232	1.0		
	2049	0.7					1851	0.7					1821	0.7					
	2208	0.7					2241	1.0					2236	1.0					
07	0156	0.4	22	0145	0.5	07	0317	0.3	22	0400	0.3	07	0323	0.4	22	0411	0.5		
	0611	1.0		1102	1.1		0911	1.0		1147	1.1		0908	1.0		1156	0.9		
	0917	0.7		1847	0.7		1853	0.6		1802	0.6		1834	0.7		1638	0.5		
	1251	0.9		2247	0.8		2317	1.1		2319	1.1		2323	1.1					
	1539	0.9																	
	1958	0.7																	
	2254	0.8																	
08	0258	0.4	23	0319	0.4	08	0413	0.3	23	0502	0.3	08	0419	0.4	23	0011	1.0		
	0741	0.9		1154	1.2		1053	1.0		1226	1.1		1019	1.1		0519	0.6		
	0930	0.8		1838	0.6		1858	0.5		1808	0.5		1836	0.6		1245	1.0		
	1258	1.0		2330	1.0		2358	1.2		2345	1.2					1734	0.4		
	1934	0.7																	
	2328	1.0																	
09	0402	0.3	24	0453	0.3	09	0513	0.3	24	0554	0.3	09	0008	1.2	24	0117	1.1		
	1258	1.0		1234	1.3		1138	1.1		1258	1.1		0524	0.4		0624	0.6		
	1926	0.6		1853	0.5		1908	0.5		1821	0.4		1117	1.1		1323	1.1		
													1821	0.5		1821	0.3		
10	0000	1.1	25	0004	1.1	10	0036	1.3	25	0019	1.2	10	0058	1.3	25	0141	1.2		
	0504	0.3		0549	0.2		0608	0.2		0639	0.3		0628	0.3		0717	0.6		
	1245	1.1		1304	1.3		1211	1.2		1330	1.2		1204	1.1		1356	1.1		
	1928	0.5		1904	0.4		1915	0.4		1851	0.2		1832	0.4		1908	0.1		
11	0036	1.3	26	0032	1.3	11	0111	1.4	26	0053	1.3	11	0149	1.4	26	0208	1.2		
	0600	0.2		0628	0.1		0653	0.2		0719	0.4		0724	0.3		0754	0.5		
	1245	1.2		1334	1.3		1241	1.3		1358	1.2		1243	1.2		1426	1.2		
	1938	0.4		1913	0.3		1919	0.3		1926	0.1		1908	0.2		1954	0.0		
12	0106	1.4	27	0056	1.4	12	0153	1.4	27	0126	1.3	12	0241	1.4	27	0221	1.3		
	0645	0.1		0706	0.1		0734	0.1		0800	0.4		0811	0.3		0824	0.5		
	1302	1.3		1358	1.3		1309	1.3		1424	1.2		1319	1.2		1456	1.2		
	1947	0.3		1926	0.2		1932	0.2		2008	0.1		1949	0.1		2041	0.0		
13	0141	1.5	28	0119	1.4	13	0232	1.5	28	0204	1.3	13	0332	1.5	28	0251	1.3		
	0724	0.0		0741	0.1		0815	0.1		0834	0.4		0851	0.3		0858	0.5		
	1321	1.4		1419	1.3		1339	1.3		1451	1.2		1358	1.2		1521	1.3		
	1958	0.3		1954	0.2		2002	0.2		2056	0.0		2034	0.1		2128	0.0		
14	0209	1.5	29	0147	1.5	14	0313	1.5	29	0243	1.4	14	0419	1.5	29	0319	1.4		
	0758	0.0		0813	0.2		0854	0.2		0906	0.5		0932	0.4		0928	0.5		

2027

CANANEIA - BASE SUL DO IOUSP

2027

LATITUDE 25 1.0 S						LONGITUDE 47 55.5 W						FUSO + 3 HORAS								
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703								
JANEIRO						FEVEREIRO						MARCO								
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0124	0.7	16	0426	0.5	01	0158	0.9	16	0117	1.2	01	0324	1.1	16	0202	1.1			
	0351	0.8		0906	1.1		0358	1.0		0717	0.4		0724	0.6		0628	0.5			
	0649	0.6		1302	0.6		0811	0.6		1128	1.0		1102	0.9		1002	0.9			
	1023	1.0		1611	0.8		1228	1.1		1924	0.3		1611	0.5		1302	0.7			
	1415	0.6		1834	0.7		1753	0.4					2219	1.0		1441	0.7			
	2251	1.0		2243	1.1											1819	0.4			
02	0232	0.8	17	0558	0.5	02	0015	1.1	17	0132	1.3	02	0039	0.9	17	0153	1.2			
	0404	0.8		1017	1.1		0839	0.5		0804	0.3		0334	1.1		0709	0.4			
	0739	0.6		1406	0.7		1321	1.2		1241	1.1		0756	0.5		1124	1.0			
	1141	1.0		1602	0.7		1845	0.2		2002	0.1		1211	1.0		1902	0.2			
	1617	0.5		1900	0.6								1743	0.4						
	2347	1.1											2356	1.1						
03	0815	0.6	18	0000	1.2	03	0106	1.2	18	0204	1.5	03	0813	0.5	18	0128	1.4			
	1245	1.1		0708	0.4		0853	0.5		0845	0.3		1302	1.2		0747	0.4			
	1749	0.4		1136	1.1		1404	1.3		1336	1.2		1830	0.2		1226	1.2			
				1938	0.4		1926	0.1		2043	0.0					1943	0.1			
04	0034	1.2	19	0109	1.3	04	0149	1.4	19	0238	1.6	04	0051	1.2	19	0145	1.5			
	0845	0.6		0808	0.4		0856	0.5		0911	0.4		0828	0.5		0811	0.3			
	1336	1.2		1247	1.1		1447	1.4		1419	1.4		1345	1.3		1313	1.3			
	1845	0.2		2013	0.2		2006	0.0		2119	0.0		1909	0.1		2021	0.0			
05	0117	1.3	20	0204	1.4	05	0224	1.5	20	0311	1.6	05	0126	1.4	20	0213	1.5			
	0851	0.6		0900	0.3		0847	0.5		0915	0.4		0834	0.4		0823	0.4			
	1417	1.3		1347	1.2		1521	1.4		1502	1.4		1421	1.4		1356	1.4			
	1930	0.1		2056	0.1		2043	-0.1		2151	0.0		1949	0.0		2056	0.1			
06	0200	1.4	21	0251	1.5	06	0302	1.5	21	0353	1.6	06	0202	1.5	21	0251	1.6			
	0830	0.6		0945	0.4		0847	0.4		0851	0.4		0828	0.4		0809	0.3			
	1500	1.3		1436	1.3		1558	1.4		1541	1.5		1458	1.5		1436	1.5			
	2013	0.0		2136	0.0		2117	-0.1		2206	0.1		2021	-0.1		2123	0.1			
07	0243	1.4	22	0334	1.6	07	0338	1.6	22	0428	1.5	07	0236	1.6	22	0323	1.5			
	0828	0.5		1015	0.5		0858	0.3		0902	0.3		0824	0.3		0813	0.2			
	1541	1.3		1519	1.4		1634	1.4		1613	1.5		1534	1.5		1511	1.5			
	2056	0.0		2213	0.0		2154	-0.1		2153	0.2		2056	-0.1		2117	0.2			
08	0319	1.5	23	0411	1.6	08	0408	1.6	23	0506	1.4	08	0306	1.6	23	0402	1.5			
	0845	0.5		0928	0.5		0915	0.3		0928	0.2		0836	0.3		0839	0.1			
	1615	1.3		1602	1.4		1702	1.4		1651	1.4		1606	1.5		1551	1.5			
	2136	0.0		2239	0.1		2226	0.0		2156	0.3		2126	-0.1		2106	0.3			
09	0358	1.5	24	0454	1.6	09	0445	1.6	24	0549	1.3	09	0341	1.6	24	0441	1.4			
	0906	0.4		0923	0.5		0943	0.2		1002	0.1		0854	0.2		0908	0.1			
	1654	1.3		1643	1.4		1734	1.3		1717	1.3		1639	1.5		1623	1.4			
	2213	0.0		2238	0.2		2300	0.1		2209	0.4		2158	0.0		2117	0.4			
10	0436	1.5	25	0534	1.5	10	0517	1.5	25	0253	0.8	10	0411	1.5	25	0517	1.2			
	0932	0.4		0951	0.4		1008	0.2		0628	1.1		0915	0.2		0949	0.1			
	1728	1.2		1715	1.3		1758	1.2		1041	0.2		1706	1.4		1656	1.4			
	2254	0.0		2236	0.3		2330	0.2		1743	1.2		2226	0.1		2141	0.4			
										2234	0.4									
11	0509	1.5	26	0611	1.3	11	0556	1.4	26	0217	1.0	11	0451	1.5	26	0141	0.9			
	1000	0.3		1019	0.3		1039	0.2		0447	0.8		0945	0.1		0306	0.9			
	1800	1.2		1751	1.2		1832	1.2		0711	1.0		1739	1.3		0600	1.1			
	2332	0.1		2254	0.4					1119	0.2		2253	0.3		1023	0.1			
										1817	1.1					1732	1.3			
										2258	0.5					2204	0.4			
12	0549	1.5	27	0656	1.2	12	0000	0.4	27	0247	1.1	12	0528	1.3	27	0158	1.1			
	1028	0.3		1058	0.3		0641	1.3		0558	0.8		1011	0.2		0449	0.9			
	1838	1.1		1615	1.1		1108	0.3		0811	0.9		1813	1.2		0653	1.0			
				1815	1.1		1609	1.0		1206	0.4		2306	0.5		1106	0.2			
				2311	0.5		1921	1.1		1915	1.0					1809	1.2			
										2324	0.6					2232	0.5			
13	0015	0.2	28	0251	0.8	13	0023	0.6	28	0306	1.1	13	0611	1.1	28	0219	1.1			
	0626	1.4		0424	0.8		0736	1.1		0653	0.7		1047	0.3		0554	0.8			
	1102	0.3		0743	1.1		1147	0.4		0934	0.8		1904	1.1		0756	0.8			
	1541	1.1		1141	0.3		1556	0.9		1317	0.5		2315	0.7		1200	0.4			
	1723	1.0		1617	1.1		1745	0.9		2047	1.0					1900	1.1			
	1919	1.1		2341	0.6		2041	1.0		2359	0.8					2300	0.6			

14	0106	0.3	29	0306	0.9	14	0154	0.8	14	0213	0.8	29	0247	1.2
	0709	1.3		0554	0.7		0504	0.6		0402	0.8		0636	0.7
	1139	0.4		0841	0.9		0843	1.0		0709	1.0		0917	0.8
	1600	1.0		1228	0.4		1223	0.5		1117	0.4		1328	0.5
	1758	1.0		1702	1.0		1549	0.8		1519	0.8		2002	1.0
	2015	1.0		1853	0.9		1809	0.7		1647	0.8		2332	0.7
				2015	1.0		2213	1.0		2013	1.0			
										2324	0.8			
15	0224	0.4	30	0008	0.7	15	0621	0.5	15	0200	1.0	30	0302	1.1
	0804	1.2		0336	1.0		1002	0.9		0538	0.7		0704	0.6
	1215	0.5		0656	0.7		1313	0.7		0834	0.9		1045	0.9
	1608	0.9		0954	0.9		1534	0.8		1200	0.5		1554	0.5
	1808	0.9		1339	0.5		1851	0.5		1500	0.8		2121	1.0
	2124	1.0		2153	0.9					1739	0.6			
										2200	1.0			
										2326	1.0			
			31	0054	0.8							31	0006	0.9
				0356	1.0								0309	1.1
				0743	0.6								0728	0.5
				1113	0.9								1149	1.0
				1556	0.6								1708	0.4
				2308	1.0								2258	1.1

2027

CANANEIA - BASE SUL DO IOUSP

2027

LATITUDE 25 1.0 S						LONGITUDE 47 55.5 W						FUSO + 3 HORAS					
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703					
ABRIL						MAIO						JUNHO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M
01	0123	1.0	16	0041	1.3	01	0724	0.5	16	0030	1.2	01	0004	1.3	16	0139	1.2
	0249	1.0		0721	0.4		1230	1.3		0647	0.5		0700	0.4		0636	0.2
	0749	0.5		1200	1.2		1802	0.2		1208	1.3		1304	1.3		1308	1.3
	1234	1.2		1917	0.2					1953	0.4		1919	0.3		2141	0.6
	1800	0.2															
02	0008	1.2	17	0109	1.4	02	0000	1.3	17	0113	1.3	02	0058	1.4	17	0217	1.3
	0758	0.4		0734	0.4		0724	0.4		0630	0.4		0713	0.3		0713	0.1
	1309	1.3		1245	1.3		1306	1.4		1254	1.3		1354	1.4		1356	1.3
	1843	0.1		2000	0.2		1849	0.1		2038	0.5		2021	0.3		2124	0.7
03	0053	1.4	18	0147	1.4	03	0049	1.4	18	0158	1.3	03	0147	1.4	18	0258	1.3
	0800	0.4		0723	0.4		0719	0.3		0653	0.2		0736	0.2		0758	0.0
	1351	1.4		1323	1.4		1347	1.4		1334	1.4		1447	1.4		1445	1.4
	1919	0.0		2036	0.2		1932	0.1		2047	0.5		2115	0.4		2019	0.6
04	0126	1.5	19	0221	1.5	04	0128	1.5	19	0238	1.4	04	0230	1.4	19	0338	1.3
	0754	0.3		0723	0.2		0721	0.3		0723	0.1		0806	0.2		0839	0.0
	1424	1.5		1404	1.4		1426	1.4		1415	1.4		1541	1.5		1530	1.4
	1958	0.0		2049	0.3		2013	0.1		1956	0.6		2202	0.4		2045	0.5
05	0202	1.5	20	0258	1.5	05	0206	1.5	20	0311	1.4	05	0311	1.3	20	0409	1.3
	0753	0.3		0747	0.1		0738	0.2		0802	0.0		0841	0.2		0921	0.0
	1500	1.5		1445	1.5		1508	1.5		1500	1.4		1628	1.5		1611	1.5
	2032	0.0		2028	0.4		2053	0.2		2011	0.5		2228	0.5		2109	0.5
06	0238	1.6	21	0338	1.4	06	0249	1.5	21	0353	1.3	06	0358	1.2	21	0449	1.2
	0804	0.2		0815	0.0		0802	0.2		0843	0.0		0924	0.2		1008	0.1
	1539	1.5		1523	1.5		1554	1.5		1547	1.4		1713	1.5		1653	1.5
	2104	0.0		2034	0.4		2124	0.3		2041	0.5		2204	0.6		2139	0.5
07	0309	1.6	22	0411	1.3	07	0326	1.4	22	0430	1.2	07	0445	1.2	22	0523	1.1
	0824	0.2		0854	0.0		0832	0.2		0924	0.1		1019	0.3		1058	0.1
	1611	1.5		1602	1.4		1639	1.5		1626	1.4		1758	1.5		1728	1.5
	2134	0.1		2054	0.4		2149	0.4		2108	0.5		2209	0.7		2204	0.4
08	0349	1.5	23	0454	1.2	08	0406	1.3	23	0506	1.1	08	0536	1.1	23	0223	1.1
	0853	0.1		0932	0.1		0906	0.2		1011	0.1		1232	0.3		0443	1.0
	1651	1.4		1643	1.4		1721	1.4		1706	1.4		1843	1.4		0606	1.0
	2200	0.3		2117	0.4		2202	0.6		2141	0.5		2238	0.7		1151	0.2
																1804	1.5
																2236	0.4
09	0423	1.4	24	0121	1.0	09	0453	1.1	24	0147	1.0	09	0156	1.0	24	0245	1.1
	0919	0.2		0302	0.9		0947	0.3		0404	1.0		0406	0.9		0539	0.9
	1728	1.4		0536	1.1		1806	1.4		0553	1.0		0639	1.0		0708	1.0
	2217	0.4		1013	0.1		2215	0.7		1108	0.2		1413	0.4		1245	0.2
				1719	1.4					1749	1.4		1923	1.3		1843	1.4
				2149	0.5					2208	0.5		2306	0.7		2306	0.4
10	0504	1.2	25	0145	1.1	10	0121	0.9	25	0204	1.1	10	0226	1.0	25	0304	1.1
	0954	0.2		0439	0.9		0249	0.8		0513	0.9		0523	0.8		0604	0.9
	1809	1.3		0621	0.9		0547	1.0		0656	0.9		0756	1.0		0817	0.9
	2234	0.6		1104	0.3		1030	0.4		1215	0.3		1517	0.4		1341	0.3
				1800	1.3		1856	1.3		1826	1.4		2009	1.2		1921	1.4
				2213	0.5		2243	0.8		2243	0.5		2351	0.7		2343	0.5
11	0556	1.0	26	0206	1.1	11	0136	1.0	26	0228	1.1	11	0304	1.0	26	0328	1.0
	1024	0.3		0541	0.8		0438	0.8		0600	0.8		0608	0.8		0623	0.8
	1902	1.2		0736	0.8		0700	0.9		0811	0.9		0904	1.0		0917	1.0
	2253	0.7		1208	0.4		1138	0.5		1326	0.3		1628	0.5		1438	0.3
				1847	1.2		1308	0.5		1908	1.3		2108	1.1		2006	1.3
				2251	0.6		1449	0.5		2313	0.6						
							1951	1.2									
							2308	0.8									
12	0147	0.9	27	0230	1.1	12	0200	1.1	27	0254	1.1	12	0045	0.7	27	0021	0.6
	0441	0.8		0613	0.7		0538	0.7		0621	0.7		0349	0.9		0353	0.9
	0702	0.9		0858	0.8		0826	0.9		0921	0.9		0643	0.7		0638	0.8
	1106	0.4		1347	0.4		1558	0.4		1432	0.3		1004	1.0		1008	1.0
	1541	0.7		1938	1.2		2051	1.2		1958	1.3		1751	0.6		1538	0.4
	2002	1.1		2319	0.7		2353	0.9		2358	0.7		2223	1.0		2102	1.2
	2306	0.9															
13	0154	1.1	28	0253	1.1	13	0224	1.1	28	0311	1.0	13	0213	0.7	28	0113	0.6

0543	0.6	0647	0.6	0613	0.6	0643	0.7	0413	0.8	0400	0.8						
0838	0.8	1009	0.9	0945	1.0	1015	1.0	0654	0.7	0643	0.7						
1204	0.6	1517	0.4	1700	0.4	1530	0.3	1058	1.1	1058	1.1						
1400	0.6	2038	1.1	2202	1.1	2054	1.2	1911	0.6	1649	0.4						
1651	0.5							2349	1.1	2209	1.2						
2123	1.1																
2332	1.0																
14	0202	1.1	29	0002	0.8	14	0100	1.0	29	0053	0.7	14	0539	0.6	29	0651	0.5
	0621	0.5		0304	1.1		0238	1.0		0328	0.9		1143	1.2		1145	1.2
	1002	0.9		0702	0.6		0647	0.6		0654	0.6		2019	0.6		1815	0.5
	1745	0.4		1106	1.0		1043	1.1		1102	1.1					2324	1.2
				1621	0.3		1800	0.4		1624	0.3						
				2151	1.1		2326	1.1		2158	1.2						
15	0143	1.2	30	0108	0.9	15	0700	0.6	30	0658	0.6	15	0051	1.1	30	0706	0.4
	0658	0.5		0300	1.0		1126	1.2		1143	1.2		0558	0.4		1236	1.3
	1108	1.0		0715	0.5		1858	0.4		1721	0.3		1223	1.2		1939	0.4
	1832	0.3		1153	1.2					2302	1.3		2106	0.6			
				1713	0.2												
				2302	1.2												
										31	0658	0.5					
											1221	1.3					
											1819	0.3					

2027

CANANEIA - BASE SUL DO IOUSP

2027

LATITUDE 25 1.0 S			LONGITUDE 47 55.5 W			FUSO + 3 HORAS											
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703					
JULHO						AGOSTO						SETEMBRO					
HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0036	1.2	16	0206	1.3	01	0211	1.3	16	0302	1.5	01	0309	1.5	16	0343	1.5
	0738	0.3		0713	0.1		0900	0.0		0817	-0.1		0943	0.1		0900	-0.1
	1334	1.3		1341	1.3		1515	1.6		1451	1.5		1611	1.6		1526	1.5
	2045	0.4		2138	0.6		2200	0.4		2051	0.4		2100	0.3		2049	0.2
02	0130	1.3	17	0247	1.4	02	0256	1.4	17	0338	1.5	02	0349	1.5	17	0409	1.5
	0811	0.2		0754	0.0		0941	0.0		0854	-0.1		0930	0.2		0928	0.0
	1436	1.4		1428	1.4		1600	1.6		1526	1.5		1654	1.5		1600	1.5
	2139	0.4		2102	0.6		2211	0.5		2058	0.4		2117	0.2		2109	0.2
03	0219	1.3	18	0319	1.4	03	0334	1.4	18	0404	1.5	03	0419	1.4	18	0441	1.4
	0853	0.1		0832	-0.1		1019	0.0		0926	-0.1		0928	0.3		0958	0.1
	1530	1.5		1511	1.4		1641	1.6		1600	1.6		1736	1.4		1636	1.5
	2221	0.4		2056	0.5		2134	0.5		2113	0.3		2151	0.2		2138	0.1
04	0304	1.3	19	0356	1.4	04	0409	1.4	19	0438	1.4	04	0451	1.3	19	0506	1.3
	0938	0.1		0911	-0.1		1032	0.2		1000	0.0		0947	0.4		1023	0.3
	1617	1.6		1554	1.5		1717	1.6		1636	1.5		1309	0.7		1709	1.4
	2247	0.5		2109	0.4		2143	0.4		2138	0.2		1438	0.7		2202	0.2
													1811	1.2			
													2221	0.1			
05	0351	1.3	20	0428	1.3	05	0447	1.4	20	0500	1.3	05	0517	1.2	20	0541	1.2
	1028	0.1		0953	0.0		1021	0.3		1034	0.1		1006	0.5		1049	0.4
	1700	1.6		1630	1.5		1758	1.5		1706	1.5		1347	0.9		1753	1.2
	2204	0.6		2132	0.4		2206	0.3		2200	0.2		1602	0.8		2232	0.2
													1858	1.1			
													2300	0.2			
06	0430	1.3	21	0458	1.3	06	0515	1.3	21	0524	1.2	06	0545	1.1	21	0638	1.1
	1123	0.2		1032	0.0		1030	0.4		1106	0.2		1038	0.5		1104	0.6
	1743	1.6		1704	1.5		1839	1.3		1743	1.4		1415	1.1		1843	1.1
	2202	0.6		2156	0.3		2241	0.2		2226	0.2		1717	0.8		2302	0.3
													1951	0.9			
													2345	0.3			
07	0509	1.2	22	0530	1.2	07	0456	1.1	22	0341	1.1	07	0708	1.0	22	0315	0.9
	1213	0.3		1111	0.1		1054	0.5		1138	0.3		1104	0.6		0438	0.8
	1819	1.5		1739	1.5		1406	0.7		1817	1.3		1453	1.1		0756	1.0
	2223	0.5		2221	0.3		1547	0.7		2256	0.2		1826	0.7		1117	0.8
							1917	1.1					2058	0.8		1356	0.9
							2313	0.3								1651	0.7
																1949	0.9
																2338	0.5
08	0556	1.1	23	0311	1.1	08	0341	1.1	23	0338	1.1	08	0041	0.5	23	0253	0.8
	1136	0.4		0458	1.1		1115	0.6		0653	1.0		0847	0.9		0515	0.6
	1900	1.3		0558	1.1		1447	0.9		1206	0.5		1143	0.8		0924	1.0
	2258	0.4		1156	0.2		1709	0.8		1902	1.2		1517	1.1		1145	1.0
				1811	1.5		2004	1.0		2323	0.3		1915	0.6		1351	1.0
				2251	0.3		2358	0.4					2236	0.9		1756	0.6
																2108	0.9
09	0300	1.1	24	0317	1.1	09	0408	1.0	24	0338	1.0	09	0447	0.6	24	0017	0.7
	0509	1.0		0653	1.0		0638	0.9		0551	0.9		1006	1.0		0219	0.7
	0656	1.0		1241	0.3		0813	0.9		0819	1.0		1226	0.9		0558	0.4
	1158	0.5		1851	1.4		1153	0.7		1239	0.7		1541	1.1		1330	1.1
	1945	1.2		2319	0.3		1515	1.0		1411	0.7		1954	0.6		1847	0.5
	2336	0.4					1836	0.7		1553	0.7					2251	1.0
							2108	0.9		2000	1.0						
10	0330	1.1	25	0338	1.0	10	0056	0.5	25	0000	0.5	10	0000	1.0	25	0634	0.2
	0608	0.9		0608	0.9		0439	0.8		0324	0.8		0541	0.4		1238	1.3
	0808	1.0		0802	1.0		0636	0.8		0600	0.7		1121	1.1		1923	0.4
	1221	0.6		1334	0.4		0943	0.9		0954	1.0		1356	1.0			
	1502	0.7		1934	1.3		1230	0.8		1749	0.6		1526	1.0			
	1647	0.7		2356	0.4		1553	1.0		2111	0.9		2017	0.5			
	2034	1.0					1938	0.7									
							2253	0.9									
11	0015	0.5	26	0354	1.0	11	0317	0.6	26	0043	0.6	11	0053	1.2	26	0004	1.1
	0404	1.0		0615	0.8		1053	1.0		0308	0.8		0617	0.2		0709	0.1
	0647	0.8		0909	1.0		1317	0.9		0624	0.5		1217	1.2		1309	1.4

0919	1.0	1454	0.5	1609	1.0	1124	1.1	2034	0.5	1956	0.4
1300	0.7	2024	1.2	2017	0.6	1854	0.5				
1549	0.8					2254	1.0				
1817	0.7										
2141	0.9										
12 0119	0.6	27 0034	0.5	12 0015	1.0	27 0658	0.3	12 0130	1.3	27 0054	1.3
0449	0.8	0358	0.8	0600	0.4	1243	1.3	0653	0.0	0751	0.0
0654	0.8	0624	0.7	1151	1.1	1945	0.4	1302	1.3	1347	1.5
1019	1.0	1015	1.0	1456	1.0			2036	0.5	2019	0.4
1345	0.8	1704	0.6	1604	1.0						
1615	0.9	2136	1.1	2051	0.6						
1939	0.7										
2308	0.9										
13 0345	0.6	28 0123	0.7	13 0109	1.2	28 0019	1.1	13 0204	1.5	28 0132	1.4
1113	1.1	0349	0.7	0634	0.2	0732	0.1	0724	-0.1	0824	0.0
1439	0.8	0647	0.6	1241	1.2	1332	1.4	1341	1.4	1424	1.5
1653	0.9	1121	1.1	2106	0.6	2024	0.3	2026	0.4	2024	0.4
2034	0.6	1847	0.5								
		2300	1.0								
14 0030	1.1	29 0708	0.4	14 0154	1.3	29 0113	1.3	14 0239	1.5	29 0208	1.5
0553	0.4	1228	1.2	0708	0.0	0808	0.0	0758	-0.1	0856	0.1
1204	1.1	1954	0.4	1324	1.3	1413	1.5	1415	1.5	1504	1.5
1654	0.9			2111	0.5	2100	0.3	2021	0.4	2015	0.3
2108	0.6										
15 0123	1.2	30 0021	1.1	15 0228	1.4	30 0158	1.4	15 0308	1.5	30 0249	1.5
0634	0.2	0745	0.2	0745	-0.1	0847	-0.1	0828	-0.1	0900	0.2
1254	1.2	1334	1.4	1408	1.4	1454	1.6	1453	1.5	1549	1.5
2134	0.6	2047	0.4	2056	0.5	2123	0.4	2030	0.3	2028	0.2
		31 0123	1.2			31 0236	1.5				
		0819	0.1			0921	0.0				
		1428	1.5			1534	1.6				
		2128	0.4			2111	0.4				

2027

CANANEIA - BASE SUL DO IOUSP

2027

LATITUDE 25		1.0 S		LONGITUDE 47		55.5 W		FUSO +		3 HORAS																																																																																														
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703																																																																																												
OUTUBRO						NOVEMBRO						DEZEMBRO																																																																																												
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT																																																																																						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA																																																																																						
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M																																																																																				
01	0321	1.5	16	0349	1.5	01	0415	1.4	16	0453	1.4	01	0445	1.4	16	0528	1.5	0843	0.3	0904	0.1	0854	0.5	0943	0.5	0917	0.5	1002	0.6	1626	1.4	1530	1.5	1239	0.9	1638	1.2	1315	1.0	1715	1.2	2058	0.1	2047	0.1	1436	0.9	2149	0.2	1506	0.9	2315	0.2					1730	1.1			1753	1.1															2204	0.1			2254	0.1																					
02	0358	1.5	17	0419	1.4	02	0456	1.3	17	0539	1.4	02	0523	1.4	17	0611	1.4	0853	0.4	0930	0.2	0923	0.5	1002	0.6	0956	0.5	1023	0.6	1708	1.3	1606	1.4	1309	1.1	1724	1.1	1354	1.1	1804	1.1	2132	0.1	2113	0.1	1553	0.9	2230	0.3	1621	0.9	2354	0.3					1813	1.0			1839	1.0															2251	0.2			2345	0.2																					
03	0432	1.4	18	0458	1.4	03	0539	1.3	18	0626	1.3	03	0604	1.3	18	0700	1.3	0909	0.4	0956	0.4	0958	0.5	1026	0.7	1028	0.5	1056	0.6	1254	0.9	1651	1.3	1351	1.1	1324	0.9	1423	1.1	1436	1.0	1449	0.8	2147	0.2	1658	0.8	1511	0.8	1719	0.9	1602	0.9	1754	1.2			1906	0.9	1821	1.0	1936	1.0	1900	1.1	2208	0.1			2345	0.3	2319	0.4																															
04	0506	1.3	19	0543	1.3	04	0624	1.2	19	0719	1.2	04	0045	0.3	19	0154	0.4	0941	0.5	1013	0.5	1034	0.6	1100	0.8	0653	1.3	0753	1.2	1321	1.0	1736	1.1	1417	1.1	1353	1.0	1104	0.5	1134	0.6	1602	0.8	2217	0.3	1753	0.8	1641	0.8	1456	1.1	1506	1.0	1839	1.0			2013	0.9	1930	1.0	1804	0.8	1717	0.9	2251	0.2							2039	0.9	2002	1.0																											
05	0551	1.2	20	0636	1.2	05	0102	0.4	20	0334	0.4	05	0154	0.4	20	0154	0.6	1008	0.5	1038	0.7	0719	1.1	0819	1.2	0743	1.2	0421	0.5	1358	1.1	1345	0.9	1109	0.7	1145	0.8	1151	0.6	0849	1.1	1709	0.8	1524	0.8	1451	1.1	1415	1.0	1521	1.0	1217	0.6	1934	0.9	1830	1.0	1828	0.7	1736	0.8	1836	0.8	1553	1.0	2338	0.3	2256	0.4	2136	0.9	2047	1.0	2145	1.0	1806	0.9											2108	1.0															
06	0647	1.1	21	0741	1.1	06	0251	0.4	21	0443	0.4	06	0306	0.4	21	0545	0.5	1045	0.6	1100	0.8	0821	1.1	0926	1.1	0838	1.2	0954	1.0	1430	1.2	1341	1.0	1158	0.8	1249	0.9	1239	0.7	1323	0.7	1809	0.7	1656	0.7	1509	1.0	1449	0.9	1554	0.9	1634	0.9	2047	0.8	1945	0.9	1858	0.6	1811	0.7	1854	0.7	1843	0.8					2247	1.0	2158	1.0	2241	1.0	2215	1.1					2341	0.5																					
07	0049	0.5	22	0158	0.6	07	0408	0.4	22	0543	0.3	07	0411	0.4	22	0654	0.5	0756	1.0	0423	0.5	0930	1.1	1043	1.1	0938	1.2	1106	1.0	1117	0.7	0858	1.1	1302	0.8	1845	0.7	1349	0.7	1509	0.7	1458	1.1	1138	1.0	1523	0.9	2258	1.1	1608	0.8	1721	0.7	1856	0.6	1351	1.0	1915	0.6			1900	0.7	1841	0.7	2211	0.9	1751	0.6	2338	1.1			2330	1.1	2317	1.1					2104	0.9																					
08	0345	0.5	23	0515	0.4	08	0502	0.3	23	0638	0.3	08	0509	0.3	23	0756	0.5	0911	1.0	1023	1.1	1036	1.2	1151	1.2	1038	1.2	1215	1.1	1204	0.9	1826	0.6	1924	0.6	1854	0.6	1856	0.6	1728	0.5	1513	1.1	2228	1.0			2351	1.2														1923	0.6																				2330	1.0																			
09	0500	0.4	24	0604	0.2	09	0017	1.2	24	0730	0.4	09	0013	1.2	24	0011	1.2	1030	1.1	1141	1.2	0549	0.2	1245	1.2	0604	0.3	0849	0.5	1319	1.0	1900	0.5	1130	1.3	1830	0.5	1134	1.3	1311	1.2	1509	1.0	2334	1.1	1921	0.5			1851	0.5	1824	0.4	1947	0.5																																																	
10	0019	1.2	25	0651	0.1	10	0056	1.3	25	0036	1.3	10	0058	1.3	25	0102	1.2	0547	0.2	1232	1.3	0628	0.1	0819	0.4	0656	0.3	0928	0.6	1134	1.2	1923	0.5	1217	1.4	1334	1.3	1226	1.3	1402	1.2	1958	0.5			1908	0.4	1841	0.3	1906	0.4	1909	0.2																																																			
11	0100	1.3	26	0021	1.3	11	0134	1.4	26	0117	1.4	11	0143	1.4	26	0149	1.3	0623	0.1	0732	0.1	0706	0.1	0902	0.5	0747	0.3	0951	0.6	1219	1.3	1313	1.4	1300	1.4	1415	1.3	1317	1.3	1449	1.3	1958	0.5	1932	0.4	1911	0.3	1915	0.2	1936	0.3	1954	0.1																																																			

FASES DA LUA PARA O ANO DE 2026

LUA NOVA				Q. CRESCENTE				LUA CHEIA				Q. MINGUANTE			
MES	D	H	M	MES	D	H	M	MES	D	H	M	MES	D	H	M
JAN	18	19	40	JAN	26	4	31	JAN	3	9	59	JAN	10	15	49
FEV	17	11	39	FEV	24	12	11	FEV	1	21	51	FEV	9	12	35
MAR	19	0	54	MAR	25	19	3	MAR	3	11	19	MAR	11	9	29
ABR	17	11	21	ABR	24	2	17	ABR	2	2	4	ABR	10	4	49
MAI	16	19	39	MAI	23	10	54	MAI	1	17	25	MAI	9	21	19
JUN	15	2	48	JUN	21	21	36	JUN	31	8	46	JUN	8	10	16
JUL	14	9	54	JUL	21	10	49	JUN	29	23	50	JUL	7	19	46
AGO	12	17	59	AGO	20	2	39	JUL	29	14	27	AGO	6	2	37
SET	11	3	56	SET	18	20	50	AGO	28	4	22	SET	4	8	8
OUT	10	16	21	SET	18	20	50	SET	26	17	11	OUT	3	13	48
NOV	9	7	29	OUT	18	16	29	OUT	26	4	49	NOV	1	20	58
DEZ	9	1	7	NOV	17	12	8	NOV	24	15	29	DEZ	1	6	35
				DEZ	17	5	53	DEZ	24	1	44	DEZ	30	19	9

TEMPO SEGUNDO O TMG

FASES DA LUA PARA O ANO DE 2027

LUA NOVA				Q. CRESCENTE				LUA CHEIA				Q. MINGUANTE			
MES	D	H	M	MES	D	H	M	MES	D	H	M	MES	D	H	M
JAN	7	20	22	JAN	15	20	28	JAN	22	12	5	JAN	29	10	43
FEV	6	15	37	FEV	14	7	38	FEV	20	22	50	FEV	28	4	52
MAR	8	9	0	MAR	15	16	2	MAR	22	10	9	MAR	30	0	33
ABR	6	23	22	ABR	13	22	39	ABR	20	22	9	ABR	28	20	13
MAI	6	10	36	MAI	13	4	33	MAI	20	11	0	MAI	28	14	13
JUN	4	19	30	JUN	11	10	46	JUN	19	0	55	JUN	27	5	23
JUL	4	3	6	JUN	11	10	46	JUL	18	15	52	JUL	26	17	26
AGO	2	10	22	JUL	10	18	25	AGO	17	7	30	AGO	25	2	51
AGO	31	18	6	AGO	9	4	37	SET	15	23	8	SET	23	10	38
SET	30	3	4	SET	7	18	21	OUT	15	14	5	OUT	22	17	47
OUT	29	14	3	OUT	7	11	50	NOV	14	3	56	NOV	21	1	10
NOV	28	3	47	NOV	6	8	16	DEZ	13	16	35	DEZ	20	9	30
DEZ	27	20	27	DEZ	6	5	41								

TEMPO SEGUNDO O TMG