

Tábuas das marés de Ubatuba, Santos e Cananéia para os anos de 2016 e 2017

Joseph Harari & Afranio Rubens de Mesquita

Instituto Oceanográfico da Universidade de São Paulo
(Caixa Postal 66149, 05315-970 São Paulo, SP, Brasil)

- **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 2016 and 2017. 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 baixamar da maré e seus respectivos instantes de ocorrência, nessas estações, para os anos de 2016 e 2017. 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, Baixamar, 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 2016 e 2017 (Harari & Mesquita, 2014). Na previsão são fornecidos os níveis máximos e mínimos de maré e seus respectivos instantes de ocorrência, nessas três estações mareográficas, 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 baixamares 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 www.mar.mil.br/dhn/chm/tabuas/index.htm.

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 baixamares 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 baixamares 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 2016 e 2017, seguidas da Tabela das Fases da Lua desses anos. As tábuas de marés e as informações sobre as fases da lua podem também ser encontradas na internet, através dos endereços www.mares.io.usp.br e www.labsip.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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2016

UBATUBA - BASE NORTE DO IOUSP

2016

LATITUDE 23 30.0 S LONGITUDE 45 7.3 W FUSO + 3 HORAS

IOUSP-BASE NORTE NIVEL MEDIO .66 M CARTA 1613

JANEIRO						FEVEREIRO						MARÇO					
DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA	
	H	M		H	M		H	M		H	M		H	M		H	M
01	0143	0.4	16	0154	0.3	01	0243	0.5	16	0339	0.5	01	0156	0.5	16	0313	0.6
	0617	0.8		0600	0.8		0700	0.8		0645	0.7		0541	0.8		0600	0.7
	1349	0.5		0804	0.7		1506	0.4		0913	0.6		1432	0.4		0911	0.6
	1836	0.9		0958	0.8		2008	0.8		1202	0.7		1845	0.8		1154	0.7
				1400	0.5		2200	0.7		1604	0.5		2104	0.7		1549	0.4
				1800	0.8		2332	0.8					2311	0.8			
				2024	0.8												
				2209	0.8												
02	0236	0.4	17	0254	0.4	02	0345	0.5	17	0030	0.9	02	0258	0.6	17	0015	0.9
	0723	0.8		0647	0.7		1124	0.8		0506	0.6		0609	0.7		0500	0.6
	1449	0.5		0839	0.7		1611	0.4		0809	0.7		0832	0.7		0738	0.7
	1956	0.8		1106	0.8					0945	0.6		1100	0.7		0941	0.6
				1506	0.5					1245	0.8		1541	0.4		1224	0.7
				1904	0.8					1730	0.4		2358	0.9		1706	0.4
				2039	0.7												
				2334	0.9												
03	0334	0.5	18	0400	0.4	03	0013	0.8	18	0111	1.0	03	0409	0.6	18	0056	1.0
	1058	0.8		0753	0.7		0451	0.5		0624	0.5		1149	0.8		0609	0.5
	1554	0.4		0902	0.7		1202	0.8		1306	0.8		1651	0.3		1247	0.8
	2153	0.8		1204	0.8		1717	0.3		1832	0.2					1809	0.3
				1626	0.5												
04	0434	0.5	19	0034	0.9	04	0051	0.9	19	0153	1.0	04	0036	1.0	19	0121	1.0
	1139	0.9		0515	0.4		0558	0.5		0711	0.4		0528	0.5		0654	0.4
	1656	0.4		1253	0.8		1234	0.9		1304	0.9		1224	0.9		1224	0.9
	2347	0.9		1745	0.4		1817	0.2		1919	0.1		1754	0.2		1858	0.2
05	0534	0.4	20	0119	1.0	05	0121	1.0	20	0213	1.1	05	0106	1.1	20	0141	1.0
	1208	0.9		0628	0.4		0654	0.4		0754	0.4		0634	0.4		0730	0.3
	1754	0.3		1323	0.8		1304	1.0		1238	1.0		1258	1.0		1221	1.0
				1847	0.2		1909	0.1		2002	0.0		1849	0.1		1943	0.1
06	0030	0.9	21	0202	1.1	06	0151	1.1	21	0224	1.1	06	0143	1.1	21	0136	1.1
	0626	0.4		0723	0.4		0745	0.3		0828	0.3		0721	0.3		0800	0.3
	1228	1.0		1332	0.9		1334	1.0		1308	1.1		1330	1.1		1253	1.1
	1847	0.2		1938	0.1		1958	0.0		2045	0.0		1939	0.0		2019	0.1
07	0102	1.0	22	0241	1.1	07	0221	1.2	22	0209	1.1	07	0211	1.2	22	0132	1.1
	0715	0.3		0808	0.4		0826	0.3		0900	0.3		0802	0.2		0834	0.2
	1256	1.0		1245	0.9		1402	1.1		1347	1.2		1356	1.1		1324	1.2
	1934	0.1		2019	0.0		2047	-0.1		2121	0.0		2023	-0.1		2056	0.0
08	0132	1.1	23	0258	1.1	08	0245	1.2	23	0223	1.1	08	0238	1.2	23	0156	1.1
	0802	0.3		0851	0.3		0906	0.2		0934	0.2		0845	0.2		0902	0.2
	1326	1.0		1317	1.0		1430	1.1		1421	1.2		1421	1.2		1402	1.2
	2017	0.0		2102	0.0		2132	-0.1		2158	0.0		2108	-0.1		2134	0.1
09	0206	1.1	24	0232	1.1	09	0311	1.2	24	0253	1.1	09	0245	1.2	24	0224	1.2
	0847	0.3		0926	0.3		0949	0.2		1002	0.2		0923	0.2		0936	0.2
	1400	1.1		1358	1.1		1454	1.2		1500	1.2		1436	1.2		1438	1.2
	2102	0.0		2145	0.0		2213	-0.1		2238	0.1		2154	-0.1		2206	0.1
10	0236	1.2	25	0245	1.1	10	0324	1.1	25	0323	1.1	10	0254	1.1	25	0258	1.1
	0928	0.3		1000	0.3		1028	0.3		1036	0.3		1000	0.2		1008	0.2
	1432	1.1		1438	1.2		1519	1.2		1536	1.2		1458	1.2		1509	1.2
	2151	-0.1		2223	0.0		2300	0.0		2308	0.2		2241	0.0		2243	0.2
11	0313	1.2	26	0313	1.1	11	0347	1.1	26	0358	1.1	11	0311	1.1	26	0326	1.1
	1008	0.3		1034	0.3		1106	0.3		1108	0.3		1043	0.2		1045	0.2
	1506	1.1		1513	1.2		1549	1.1		1608	1.1		1521	1.2		1545	1.2
	2236	0.0		2300	0.1		2349	0.1		2347	0.3		2323	0.1		2311	0.3
12	0341	1.1	27	0351	1.1	12	0411	1.0	27	0426	1.0	12	0339	1.0	27	0356	1.0
	1053	0.3		1102	0.4		1149	0.4		1149	0.3		1124	0.3		1123	0.3
	1534	1.1		1556	1.1		1615	1.1		1641	1.1		1558	1.1		1613	1.1
	2319	0.0		2341	0.2											2351	0.4
13	0415	1.1	28	0423	1.0	13	0036	0.2	28	0019	0.4	13	0009	0.3	28	0417	1.0
	1134	0.4		1139	0.4		0445	0.9		0454	0.9		0406	0.9		1206	0.3
	1606	1.0		1634	1.1		1236	0.4		1236	0.4		1209	0.4		1649	1.0
							1654	1.0		1711	1.0		1632	1.0			
14	0006	0.1	29	0017	0.3	14	0126	0.3	29	0102	0.5	14	0100	0.4	29	0030	0.5
	0447	1.0		0500	1.0		0511	0.8		0513	0.9		0443	0.9		0438	0.9
	1215	0.4		1217	0.4		0823	0.6		1328	0.4		0949	0.6		1258	0.4
	1639	1.0		1708	1.0		0951	0.7		1751	0.9		1308	0.4		1721	0.9
							1332	0.5					1709	0.9			
							1734	0.9					2000	0.7			
							2019	0.7					2223	0.8			

2016

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2016

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					
DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA	
	H	M		H	M		H	M		H	M		H	M		H	M
01	0341	0.6	16	0021	0.9	01	0423	0.5	16	0006	0.9	01	0043	1.0	16	0611	0.3
	0609	0.7		0539	0.5		1141	0.9		0530	0.5		0551	0.3		1200	1.0
	0753	0.6		1213	0.8		1656	0.2		1038	0.9		1256	1.1		1849	0.3
	1121	0.8		1743	0.3					1754	0.3		1823	0.2			
	1617	0.3															
02	0006	1.0	17	0051	1.0	02	0017	1.1	17	0021	0.9	02	0123	1.0	17	0019	1.0
	0502	0.5		0621	0.4		0528	0.4		0613	0.3		0643	0.3		0658	0.2
	1204	0.9		1126	0.9		1223	1.0		1128	1.0		1343	1.1		1236	1.0
	1723	0.2		1832	0.2		1754	0.1		1841	0.3		1917	0.1		1930	0.3
03	0047	1.1	18	0058	1.0	03	0100	1.1	18	0019	1.0	03	0154	1.0	18	0049	1.0
	0608	0.4		0656	0.3		0621	0.3		0653	0.3		0734	0.2		0743	0.1
	1243	1.0		1156	1.0		1302	1.1		1209	1.0		1426	1.1		1311	1.1
	1821	0.1		1911	0.2		1849	0.0		1919	0.2		2008	0.2		2009	0.3
04	0121	1.2	19	0047	1.0	04	0138	1.1	19	0036	1.0	04	0126	0.9	19	0119	1.1
	0654	0.3		0728	0.2		0706	0.2		0730	0.2		0821	0.1		0823	0.0
	1315	1.1		1228	1.1		1339	1.1		1247	1.1		1502	1.1		1347	1.1
	1911	0.0		1953	0.1		1939	0.0		1958	0.2		2058	0.2		2053	0.3
05	0154	1.2	20	0104	1.1	05	0204	1.1	20	0106	1.1	05	0121	1.0	20	0154	1.1
	0738	0.2		0800	0.2		0753	0.2		0806	0.1		0908	0.1		0904	0.0
	1347	1.2		1306	1.2		1408	1.2		1319	1.2		1428	1.1		1423	1.2
	2000	-0.1		2028	0.1		2024	0.0		2038	0.2		2145	0.3		2132	0.3
06	0223	1.2	21	0128	1.1	06	0141	1.0	21	0136	1.1	06	0156	1.0	21	0224	1.1
	0815	0.2		0836	0.1		0838	0.1		0847	0.1		0956	0.1		0951	0.0
	1408	1.2		1341	1.2		1411	1.2		1358	1.2		1447	1.1		1500	1.2
	2049	-0.1		2104	0.1		2111	0.1		2111	0.2		2228	0.4		2208	0.3
07	0224	1.1	22	0200	1.2	07	0147	1.0	22	0208	1.1	07	0230	1.0	22	0300	1.1
	0858	0.1		0908	0.1		0921	0.1		0924	0.1		1045	0.1		1034	0.0
	1417	1.2		1413	1.2		1417	1.1		1432	1.2		1519	1.0		1536	1.1
	2134	0.0		2141	0.2		2158	0.2		2153	0.3		2308	0.5		2251	0.4
08	0217	1.1	23	0230	1.1	08	0209	1.0	23	0239	1.1	08	0309	1.0	23	0332	1.0
	0939	0.1		0947	0.1		1006	0.1		1004	0.1		1130	0.1		1115	0.1
	1434	1.2		1451	1.2		1451	1.1		1508	1.2		1600	1.0		1615	1.1
	2215	0.1		2211	0.3		2247	0.3		2226	0.4		2353	0.5		2332	0.4
09	0239	1.0	24	0302	1.1	09	0247	1.0	24	0308	1.1	09	0356	1.0	24	0404	1.0
	1021	0.2		1023	0.1		1054	0.2		1049	0.1		1217	0.2		1202	0.1
	1502	1.2		1521	1.2		1523	1.0		1545	1.1		1645	0.9		1654	1.0
	2302	0.2		2249	0.3		2332	0.4		2304	0.4						
10	0306	1.0	25	0326	1.0	10	0317	1.0	25	0338	1.0	10	0032	0.6	25	0013	0.5
	1106	0.2		1102	0.2		1147	0.2		1134	0.2		0443	1.0		0438	0.9
	1538	1.1		1556	1.1		1606	1.0		1621	1.0		1306	0.3		1254	0.2
	2353	0.4		2323	0.4		1858	0.8		2349	0.5		1728	0.9		1734	0.9
11	0341	1.0	26	0353	1.0	11	0015	0.6	26	0404	0.9	11	0113	0.6	26	0102	0.5
	1156	0.3		1149	0.2		0400	1.0		1219	0.2		0536	0.9		0511	0.9
	1613	1.0		1628	1.0		1241	0.3		1704	1.0		1402	0.4		1351	0.2
	1913	0.8					1654	0.9					1823	0.8		1823	0.8
	2043	0.8					1913	0.8					2058	0.7		1943	0.8
12	0043	0.5	27	0002	0.5	12	0106	0.6	27	0038	0.5	12	0206	0.6	27	0200	0.5
	0411	0.9		0409	0.9		0447	0.9		0434	0.9		0645	0.8		0602	0.8
	1256	0.3		1239	0.3		1341	0.3		1313	0.2		1502	0.4		0800	0.8
	1700	0.9		1708	0.9		1749	0.8		1800	0.9		1943	0.8		0926	0.8
13	0139	0.6	28	0056	0.6	13	0202	0.6	28	0134	0.5	13	0309	0.5	28	0302	0.5
	0454	0.9		0438	0.8		0543	0.8		0509	0.8		0809	0.8		1056	0.9
	0853	0.5		1339	0.3		1047	0.6		1413	0.3		1604	0.4		1553	0.3
	1041	0.6		1804	0.8		1447	0.4		2206	0.9		2330	0.8		2343	0.9
14	1400	0.4	29	0158	0.6	14	0309	0.6	29	0238	0.5	14	0419	0.5	29	0409	0.5
	1758	0.7		2147	0.8		1902	0.7		2006	0.7		2058	0.7		1943	0.8
	1958	0.7					2006	0.7					2213	0.7		2126	0.9
	2306	0.9					2134	0.8					2256	0.8		2243	0.9
	0249	0.7		0158	0.6		0309	0.6		0238	0.5		0419	0.5		0409	0.5
0545	0.8	0506	0.8	0709	0.8	0611	0.7	0953	0.8	1200	0.9						
0915	0.6	0756	0.7	1554	0.4	0709	0.7	1706	0.4	1658	0.3						
1126	0.6	0934	0.7	2349	0.9	1006	0.8	2341	0.9								
1517	0.4	1443	0.3			1515	0.3										
2354	0.9	2251	0.9			2304	1.0										

15	0421	0.6	30	0308	0.6	15	0430	0.5	30	0343	0.5	15	0521	0.4	30	0032	0.9
	0724	0.7		0602	0.7		0909	0.8		1111	0.9		1111	0.9		0523	0.4
	0954	0.7		0730	0.7		1700	0.4		1621	0.2		1800	0.4		1258	1.0
	1200	0.7		1051	0.8					2356	1.0		2353	0.9		1804	0.3
	1638	0.4		1551	0.3												
				2338	1.0												
									31	0451	0.4						
										1204	1.0						
										1724	0.2						

2016

UBATUBA - BASE NORTE DO IOUSP

2016

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

DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA					
	H	M		H	M		H	M		H	M		H	M		H	M	H	M	H	M
	ALT	ALT		ALT	ALT		ALT	ALT		ALT	ALT		ALT	ALT		ALT	ALT	ALT	ALT	ALT	ALT
01	0145	1.2	16	0211	1.2	01	0236	1.2	16	0238	1.1	01	0258	1.2	16	0311	1.0				
	0917	0.1		0906	0.0		1000	0.3		1023	0.3		1011	0.4		1053	0.4				
	1406	1.1		1411	1.1		1449	1.1		1426	1.0		1500	1.1		1456	1.0				
	2119	0.2		2115	0.1		2208	0.1		2236	0.1		2234	0.1		2309	0.1				
02	0217	1.2	17	0224	1.2	02	0309	1.2	17	0309	1.1	02	0332	1.1	17	0345	1.0				
	0954	0.1		0954	0.0		1036	0.3		1108	0.4		1053	0.4		1136	0.5				
	1439	1.1		1424	1.1		1515	1.1		1502	1.0		1530	1.0		1538	1.0				
	2154	0.2		2200	0.1		2249	0.2		2324	0.2		2313	0.1		2358	0.2				
03	0256	1.2	18	0251	1.2	03	0347	1.1	18	0353	1.0	03	0409	1.1	18	0421	0.9				
	1026	0.2		1041	0.2		1106	0.4		0613	0.9		1130	0.5		1211	0.5				
	1509	1.1		1454	1.0		1545	1.0		0721	0.9		1600	1.0		1619	1.0				
	2228	0.2		2247	0.2		2332	0.2		1158	0.5										
										1543	1.0										
04	0330	1.2	19	0319	1.1	04	0419	1.0	19	0015	0.2	04	0000	0.2	19	0051	0.2				
	1058	0.3		1126	0.3		1149	0.5		0432	0.9		0451	1.0		0504	0.9				
	1543	1.1		1519	1.0		1604	0.9		0656	0.8		1211	0.5		0856	0.7				
	2306	0.2		2338	0.2					0854	0.8		1624	0.9		1256	0.5				
										1249	0.6					1708	1.0				
										1623	0.9										
05	0402	1.1	20	0400	1.0	05	0017	0.3	20	0111	0.3	05	0053	0.2	20	0143	0.3				
	1134	0.4		1213	0.5		0500	0.9		0517	0.8		0534	0.9		0554	0.8				
	1606	1.0		1558	0.9		1236	0.6		0723	0.7		1302	0.5		0843	0.7				
	2351	0.3					1623	0.9		1000	0.8		1702	0.8		1000	0.7				
										1341	0.6					1345	0.6				
										1711	0.9					1806	0.9				
06	0436	1.0	21	0032	0.3	06	0109	0.3	21	0213	0.3	06	0149	0.3	21	0239	0.4				
	1208	0.5		0443	0.9		0547	0.9		0617	0.7		0913	0.9		0654	0.8				
	1624	0.9		0704	0.8		1332	0.6		0800	0.7		1402	0.5		0911	0.7				
				0926	0.8		1656	0.8		1054	0.8		1754	0.8		1051	0.7				
				1308	0.6					1441	0.6		1945	0.8		1443	0.5				
				1634	0.9					1824	0.8		2106	0.8		1921	0.8				
				2154	0.6					2202	0.7										
										2302	0.7										
07	0041	0.3	22	0136	0.4	07	0211	0.3	22	0323	0.4	07	0249	0.3	22	0341	0.4				
	0509	0.9		0526	0.8		1015	0.9		1134	0.8		1030	0.9		0811	0.8				
	1258	0.6		0734	0.7		1438	0.6		1551	0.6		1504	0.5		0956	0.8				
	1645	0.8		1039	0.9		1743	0.7		2008	0.8		2238	0.8		1121	0.8				
				1411	0.7		1928	0.7		2339	0.7					1551	0.5				
				1711	0.8		2206	0.7								2058	0.8				
				2058	0.6																
				2258	0.6																
08	0139	0.4	23	0249	0.4	08	0317	0.3	23	0432	0.4	08	0351	0.3	23	0445	0.5				
	0558	0.8		0754	0.7		1106	0.9		1200	0.8		1124	1.0		1139	0.8				
	0847	0.8		1126	0.9		1549	0.5		1658	0.5		1608	0.4		1658	0.4				
	1013	0.8		1536	0.7		2308	0.8		2158	0.8		2339	0.9		2230	0.8				
	1358	0.6		1826	0.7																
	1704	0.8		2121	0.6																
				2343	0.7																
09	0245	0.4	24	0402	0.4	09	0421	0.2	24	0534	0.4	09	0453	0.2	24	0545	0.4				
	1108	0.9		1204	0.9		1154	1.0		1217	0.9		1211	1.0		1134	0.9				
	1506	0.6		1702	0.6		1654	0.4		1751	0.4		1713	0.4		1756	0.3				
	1749	0.7					2356	1.0		2306	0.9					2341	0.9				
	1953	0.7																			
	2258	0.7																			
10	0353	0.3	25	0008	0.8	10	0523	0.2	25	0623	0.3	10	0032	1.0	25	0636	0.4				
	1151	1.0		0511	0.3		1234	1.1		1211	0.9		0553	0.2		1204	0.9				
	1626	0.6		1239	0.9		1751	0.3		1836	0.3		1258	1.0		1845	0.2				
	2343	0.9		1756	0.5					2349	1.0		1811	0.3							
11	0458	0.2	26	0006	0.8	11	0039	1.0	26	0704	0.3	11	0119	1.1	26	0026	1.0				
	1223	1.0		0606	0.3		0617	0.1		1217	1.0		0651	0.2		0717	0.3				
	1738	0.5		1256	1.0		1309	1.1		1913	0.2		1339	1.0		1232	1.0				
				1838	0.4		1841	0.3					1906	0.2		1928	0.1				
				2338	1.0																
12	0019	1.0	27	0656	0.2	12	0117	1.1	27	0026	1.1	12	0208	1.1	27	0104	1.0				
	0558	0.1		1247	1.0		0709	0.0		0747	0.2		0745	0.2		0758	0.3				
	1258	1.1		1909	0.3		1343	1.1		1247	1.1		1358	1.0		1308	1.1				
	1828	0.3					1926	0.2		1954	0.1		1958	0.1		2008	0.1				
13	0054	1.1	28	0011	1.1	13	0153	1.2	28	0106	1.1	13	0256	1.1	28	0138	1.1				

0651	0.0	0738	0.2	0800	0.0	0823	0.2	0836	0.2	0839	0.3
1330	1.1	1243	1.0	1349	1.0	1319	1.1	1323	1.0	1341	1.1
1911	0.2	1945	0.2	2011	0.1	2034	0.1	2049	0.0	2053	0.0
14 0126	1.1	29 0047	1.1	14 0223	1.2	29 0145	1.2	14 0341	1.1	29 0211	1.1
0738	0.0	0813	0.1	0851	0.1	0900	0.3	0921	0.3	0915	0.3
1354	1.2	1309	1.1	1338	1.0	1356	1.1	1341	1.0	1415	1.1
1954	0.2	2019	0.1	2058	0.1	2109	0.1	2138	0.0	2136	0.0
15 0151	1.2	30 0121	1.2	15 0221	1.1	30 0219	1.2	15 0424	1.1	30 0247	1.2
0823	-0.1	0853	0.2	0938	0.2	0939	0.3	1006	0.3	0956	0.3
1413	1.1	1341	1.1	1400	1.0	1426	1.1	1413	1.0	1451	1.1
2036	0.1	2056	0.1	2147	0.1	2153	0.1	2223	0.0	2213	0.0
		31 0200	1.2							31 0323	1.1
		0926	0.2							1034	0.4
		1413	1.1							1523	1.1
		2132	0.1							2258	0.0

2016

PORTO DE SANTOS - TORRE GRANDE

2016

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					
DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M
01	0147	0.4	16	0151	0.3	01	0239	0.6	16	0328	0.6	01	0149	0.7	16	0306	0.7
	0651	1.0		0704	1.0		0756	0.9		0739	0.8		0615	0.9		0541	0.8
	1345	0.6		1234	0.7		1508	0.5		1043	0.7		1424	0.5		0953	0.7
	1847	1.0		1623	0.8		2038	0.9		1249	0.8		1923	1.0		1213	0.8
				1815	0.8					1600	0.6					1521	0.6
				2226	1.0					1704	0.7					1847	0.7
										1902	0.6						
02	0232	0.5	17	0249	0.4	02	0347	0.6	17	0043	1.2	02	0306	0.7	17	0032	1.1
	0802	1.0		0800	0.9		1153	1.0		0453	0.6		1132	0.9		0449	0.7
	1456	0.6		1415	0.7		1615	0.5		1302	0.9		1532	0.5		1238	0.9
	2023	1.0		1636	0.7		2334	1.0		1845	0.5					1704	0.5
				1845	0.7												
				2338	1.1												
03	0321	0.5	18	0354	0.5	03	0645	0.6	18	0126	1.3	03	0002	1.0	18	0108	1.2
	1108	1.0		0917	0.9		1241	1.1		0606	0.6		0704	0.6		0615	0.6
	1606	0.5		1858	0.6		1717	0.4		1321	1.0		1217	1.0		1247	1.0
	2221	1.0								1839	0.4		1638	0.4		1809	0.4
04	0428	0.6	19	0039	1.2	04	0038	1.1	19	0202	1.3	04	0043	1.1	19	0141	1.3
	1208	1.1		0502	0.5		0738	0.5		0645	0.5		0739	0.5		0628	0.5
	1708	0.4		1300	0.9		1319	1.2		1334	1.1		1258	1.1		1256	1.1
	2336	1.1		1904	0.5		1808	0.2		1913	0.2		1738	0.3		1847	0.2
05	0624	0.5	20	0134	1.3	05	0121	1.3	20	0236	1.4	05	0117	1.3	20	0202	1.4
	1253	1.1		0606	0.5		0806	0.4		0721	0.4		0802	0.4		0700	0.3
	1756	0.3		1330	1.0		1356	1.3		1347	1.2		1339	1.3		1315	1.3
				1904	0.4		1854	0.1		1947	0.1		1832	0.1		1924	0.2
06	0030	1.2	21	0217	1.3	06	0200	1.4	21	0256	1.4	06	0151	1.4	21	0223	1.4
	0724	0.5		0658	0.4		0836	0.4		0756	0.3		0826	0.4		0732	0.2
	1332	1.2		1343	1.1		1436	1.3		1408	1.3		1415	1.4		1343	1.4
	1838	0.2		1926	0.2		1938	0.0		2023	0.1		1919	-0.1		2002	0.1
07	0117	1.3	22	0256	1.4	07	0238	1.4	22	0313	1.4	07	0221	1.5	22	0238	1.4
	0758	0.4		0738	0.4		0851	0.3		0830	0.2		0841	0.3		0806	0.1
	1406	1.3		1406	1.2		1508	1.4		1434	1.4		1453	1.4		1408	1.5
	1915	0.1		2004	0.1		2023	-0.1		2102	0.0		2006	-0.2		2039	0.1
08	0158	1.4	23	0328	1.4	08	0309	1.5	23	0326	1.4	08	0247	1.5	23	0256	1.4
	0830	0.4		0815	0.3		0915	0.3		0904	0.2		0853	0.3		0843	0.1
	1439	1.3		1424	1.3		1539	1.4		1500	1.5		1528	1.5		1439	1.5
	1956	0.0		2043	0.1		2109	-0.2		2141	0.1		2053	-0.2		2115	0.1
09	0239	1.4	24	0347	1.4	09	0338	1.5	24	0343	1.4	09	0311	1.5	24	0313	1.4
	0845	0.4		0854	0.3		0932	0.3		0943	0.2		0917	0.3		0917	0.1
	1509	1.3		1451	1.3		1613	1.4		1526	1.5		1554	1.5		1506	1.5
	2039	-0.1		2123	0.1		2158	-0.1		2221	0.1		2138	-0.2		2151	0.2
10	0317	1.5	25	0400	1.4	10	0406	1.4	25	0402	1.4	10	0334	1.4	25	0332	1.4
	0917	0.4		0928	0.3		0958	0.4		1019	0.2		0939	0.3		0954	0.1
	1532	1.3		1513	1.4		1626	1.3		1556	1.5		1621	1.4		1539	1.5
	2124	-0.1		2208	0.1		2247	-0.1		2258	0.2		2221	-0.1		2223	0.3
11	0353	1.5	26	0413	1.3	11	0434	1.4	26	0424	1.3	11	0358	1.3	26	0354	1.3
	0939	0.4		1004	0.3		1024	0.4		1058	0.2		1008	0.3		1034	0.2
	1547	1.2		1543	1.4		1638	1.2		1626	1.4		1626	1.3		1608	1.5
	2215	-0.1		2253	0.1		2336	0.1		2338	0.3		2308	0.1		2238	0.4
12	0426	1.4	27	0434	1.3	12	0502	1.3	27	0453	1.2	12	0421	1.2	27	0413	1.3
	1009	0.4		1045	0.3		1054	0.4		1141	0.3		1041	0.4		1115	0.3
	1611	1.2		1609	1.4		1656	1.1		1700	1.3		1643	1.2		1645	1.4
	2306	0.0		2338	0.2								2356	0.3		2224	0.5
13	0502	1.3	28	0500	1.3	13	0024	0.2	28	0011	0.5	13	0451	1.1	28	0439	1.2
	1041	0.5		1123	0.3		0534	1.1		0517	1.1		1111	0.5		1202	0.3
	1634	1.1		1645	1.3		1121	0.5		1230	0.4		1700	1.0		1717	1.3
							1706	1.0		1738	1.2					2230	0.6
							1911	1.0									
							2045	1.0									
14	0000	0.1	29	0019	0.3	14	0117	0.4	29	0047	0.6	14	0049	0.5	29	0500	1.0
	0539	1.3		0528	1.2		0604	1.0		0549	1.0		0509	1.0		1258	0.4
	1109	0.5		1206	0.4		1143	0.6		1324	0.5		1056	0.6		1800	1.2
	1700	1.0		1719	1.2		1704	0.9		1819	1.1		1202	0.5		2256	0.7
	1943	1.0					1913	0.9					1713	0.9			
							2223	1.0					1945	0.9			
													2217	1.0			
15	0054	0.2	30	0102	0.4	15	0217	0.5				15	0153	0.7	30	0509	0.9
	0617	1.1		0602	1.1		0643	0.9					0530	0.9		1356	0.4

2016

PORTO DE SANTOS - TORRE GRANDE

2016

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					
DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M
01	0704	0.6	16	0043	1.2	01	0706	0.5	16	0024	1.1	01	0011	1.1	16	0100	1.2
	1149	1.0		0530	0.6		1156	1.1		0524	0.5		0724	0.4		0615	0.3
	1602	0.4		1153	1.0		1638	0.2		1124	1.1		1308	1.3		1219	1.2
02				1715	0.4					1726	0.4		1811	0.2		1911	0.5
	0026	1.1	17	0104	1.2	02	0019	1.2	17	0053	1.2	02	0049	1.2	17	0138	1.3
	0724	0.5		0604	0.5		0728	0.4		0606	0.3		0730	0.3		0654	0.2
	1230	1.1		1209	1.1		1239	1.3		1204	1.2		1400	1.4		1304	1.3
1708	0.2	1813		0.3	1739		0.1	1828		0.4	1908		0.2	1958		0.4	
03	0056	1.2	18	0128	1.3	03	0049	1.3	18	0119	1.3	03	0128	1.2	18	0206	1.3
	0751	0.4		0634	0.3		0747	0.3		0643	0.2		0739	0.2		0726	0.1
	1309	1.3		1239	1.3		1324	1.4		1243	1.3		1454	1.4		1347	1.4
	1809	0.1		1900	0.2		1836	0.1		1923	0.3		1958	0.2		2036	0.4
04	0128	1.4	19	0149	1.3	04	0123	1.3	19	0149	1.3	04	0158	1.2	19	0236	1.3
	0806	0.3		0708	0.2		0751	0.3		0717	0.1		0811	0.2		0802	0.0
	1351	1.4		1309	1.4		1411	1.5		1319	1.4		1547	1.4		1426	1.4
	1902	0.0		1941	0.2		1926	0.0		2004	0.3		2039	0.2		2104	0.4
05	0153	1.4	20	0208	1.4	05	0145	1.4	20	0215	1.4	05	0221	1.2	20	0256	1.3
	0823	0.3		0743	0.1		0806	0.2		0753	0.1		0853	0.1		0839	0.0
	1432	1.5		1345	1.5		1454	1.5		1358	1.4		1634	1.4		1506	1.4
	1947	-0.1		2019	0.2		2013	0.0		2039	0.3		2119	0.3		2128	0.4
06	0217	1.5	21	0230	1.4	06	0211	1.3	21	0238	1.4	06	0251	1.2	21	0315	1.3
	0830	0.2		0815	0.1		0828	0.2		0826	0.0		0936	0.1		0921	0.0
	1511	1.5		1415	1.5		1541	1.5		1436	1.5		1709	1.3		1543	1.5
	2032	-0.1		2054	0.2		2058	0.1		2111	0.3		2200	0.4		2145	0.4
07	0238	1.4	22	0251	1.4	07	0236	1.3	22	0254	1.3	07	0309	1.2	22	0324	1.2
	0851	0.2		0853	0.0		0904	0.2		0904	0.0		1028	0.2		1008	0.0
	1541	1.5		1451	1.5		1628	1.4		1509	1.5		1730	1.2		1621	1.4
	2115	-0.1		2128	0.2		2139	0.2		2134	0.3		2238	0.5		2211	0.4
08	0302	1.4	23	0308	1.4	08	0300	1.2	23	0309	1.3	08	0339	1.2	23	0345	1.2
	0919	0.2		0930	0.1		0945	0.2		0943	0.1		1124	0.2		1100	0.1
	1619	1.4		1521	1.5		1708	1.3		1549	1.5		1730	1.2		1700	1.4
	2200	0.0		2149	0.3		2217	0.3		2151	0.4		2311	0.5		2238	0.5
09	0323	1.3	24	0324	1.3	09	0321	1.2	24	0324	1.2	09	0404	1.1	24	0404	1.1
	0956	0.3		1009	0.1		1036	0.3		1028	0.1		1217	0.3		1156	0.1
	1624	1.3		1556	1.5		1717	1.2		1624	1.4		1753	1.1		1743	1.3
	2243	0.2		2211	0.4		2300	0.5		2215	0.5		2356	0.6		2308	0.5
10	0351	1.2	25	0347	1.3	10	0349	1.1	25	0349	1.2	10	0438	1.1	25	0417	1.0
	1036	0.3		1053	0.2		1138	0.3		1121	0.2		1308	0.3		1251	0.2
	1638	1.2		1632	1.4		1721	1.1		1706	1.3		1823	1.0		1824	1.2
	2324	0.4		2217	0.5		2343	0.6		2241	0.5					2345	0.6
11	0408	1.1	26	0404	1.2	11	0406	1.1	26	0404	1.1	11	0045	0.6	26	0409	0.9
	1126	0.4		1143	0.3		1239	0.4		1215	0.2		0519	1.0		0636	0.9
	1700	1.1		1708	1.3		1756	1.0		1753	1.3		1358	0.4		0902	0.9
				2234	0.6					2315	0.6		1908	1.0		1345	0.2
12																	
	0011	0.6	27	0423	1.0	12	0030	0.7	27	0409	1.0	12	0153	0.7	27	0032	0.7
	0430	1.0		1238	0.3		0430	1.0		1309	0.2		0643	0.9		0400	0.8
	0906	0.6		1754	1.2		0902	0.6		1847	1.2		1449	0.4		0621	0.8
	1000	0.6		2311	0.7		1002	0.7					2028	0.9		1009	1.0
	1239	0.5					1338	0.4								1441	0.3
	1730	0.9					1847	0.9								2013	1.0
	1938	0.9					2002	0.9									
2156	1.0				2208		0.9										
13	0109	0.7	28	0426	0.9	13	0138	0.8	28	0002	0.7	13	0313	0.6	28	0200	0.7
	0445	0.9		1332	0.3		0502	0.9		0351	0.9		0921	0.9		0400	0.8
	0906	0.6		1854	1.1		0919	0.7		0643	0.8		1538	0.5		0641	0.7
	1100	0.7					1043	0.7		0945	0.9		2336	1.0		1108	1.1
	1353	0.5					1430	0.4		1406	0.3					1541	0.3
	1815	0.8					2315	1.0		1954	1.1					2128	1.0
	1938	0.8															
2311	1.0																
14	0232	0.8	29	0034	0.8	14	0302	0.7	29	0128	0.8	14	0436	0.5	29	0658	0.6
	0458	0.9		0349	0.8		1038	0.9		0336	0.8		1043	1.0		1206	1.2
	0913	0.7		0702	0.7		1524	0.4		0636	0.7		1636	0.5		1645	0.4
	1136	0.8		1019	0.9		2356	1.0		1039	1.0					2309	1.0
	1500	0.5		1430	0.3					1504	0.3						
		2023	1.0			2113	1.1										
15	0004	1.1	30	0654	0.6	15	0428	0.6	30	0653	0.6	15	0021	1.1	30	0711	0.5

0421	0.7	1109	1.0	1051	1.0	1126	1.1	0532	0.4	1306	1.3
0700	0.7	1532	0.3	1623	0.4	1606	0.3	1134	1.1	1753	0.4
1151	0.9	2324	1.1			2243	1.1	1751	0.5		
1608	0.5										
				31	0706	0.5					
					1215	1.2					
					1709	0.2					

2016

PORTO DE SANTOS - TORRE GRANDE

2016

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

DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA				
	ALT	ALT		ALT	ALT		ALT	ALT		ALT	ALT						
	M	M		M	M		M	M		M	M						
01	0117	1.1	16	0126	1.2	01	0215	1.2	16	0219	1.3	01	0221	1.4	16	0304	1.5
	0717	0.3		0626	0.2		0749	0.1		0721	0.0		0841	0.0		0824	-0.2
	1402	1.3		1300	1.2		1521	1.4		1417	1.4		1524	1.4		1447	1.5
	1853	0.4		2002	0.5		2011	0.3		2053	0.4		2054	0.2		2106	0.2
02	0141	1.1	17	0200	1.3	02	0224	1.3	17	0251	1.4	02	0247	1.5	17	0332	1.5
	0728	0.2		0704	0.1		0823	0.0		0802	-0.1		0915	0.0		0908	-0.2
	1456	1.4		1345	1.3		1551	1.4		1447	1.5		1536	1.4		1511	1.5
	1943	0.3		2038	0.4		2045	0.3		2111	0.3		2126	0.1		2126	0.2
03	0211	1.2	18	0234	1.3	03	0243	1.3	18	0323	1.4	03	0309	1.5	18	0351	1.5
	0800	0.1		0741	0.0		0902	0.0		0843	-0.2		0956	0.1		0954	-0.1
	1543	1.4		1424	1.4		1609	1.4		1517	1.5		1553	1.4		1539	1.4
	2024	0.3		2100	0.4		2115	0.3		2128	0.3		2202	0.2		2156	0.2
04	0226	1.2	19	0300	1.3	04	0302	1.4	19	0341	1.4	04	0339	1.5	19	0409	1.4
	0839	0.1		0819	-0.1		0945	0.0		0928	-0.2		1036	0.2		1039	0.1
	1619	1.4		1502	1.5		1617	1.4		1545	1.5		1611	1.3		1606	1.3
	2104	0.3		2124	0.4		2153	0.2		2147	0.3		2241	0.2		2224	0.3
05	0251	1.2	20	0326	1.3	05	0326	1.4	20	0404	1.4	05	0406	1.5	20	0421	1.2
	0921	0.1		0902	-0.1		1026	0.1		1015	-0.1		1115	0.3		1126	0.3
	1647	1.4		1536	1.5		1628	1.3		1613	1.4		1636	1.3		1636	1.2
	2141	0.3		2139	0.4		2224	0.3		2211	0.3		2319	0.3		2258	0.4
06	0309	1.3	21	0339	1.3	06	0356	1.4	21	0413	1.3	06	0441	1.4	21	0441	1.1
	1009	0.1		0949	-0.1		1111	0.2		1106	0.0		1154	0.5		1217	0.5
	1658	1.3		1609	1.5		1651	1.3		1645	1.3		1700	1.2		1700	1.1
	2211	0.4		2202	0.4		2300	0.3		2239	0.4					2341	0.5
07	0338	1.3	22	0356	1.3	07	0423	1.4	22	0428	1.2	07	0002	0.4	22	0456	1.0
	1100	0.1		1039	0.0		1158	0.3		1158	0.2		0511	1.3		0719	0.9
	1706	1.3		1643	1.4		1711	1.2		1713	1.2		1002	0.6		0945	1.0
	2251	0.4		2226	0.4		2341	0.3		2306	0.4		1119	0.6		1319	0.6
													1243	0.6		1721	1.0
													1726	1.1		2149	0.6
																2308	0.6
08	0404	1.3	23	0411	1.2	08	0456	1.3	23	0445	1.1	08	0058	0.4	23	0058	0.6
	1151	0.2		1132	0.0		1247	0.4		1253	0.3		0556	1.1		0502	0.8
	1723	1.2		1717	1.4		1743	1.2		1749	1.1		1013	0.7		0717	0.8
	2324	0.4		2254	0.4					2332	0.5		1202	0.7		1106	1.0
													1341	0.7		1438	0.8
													1754	1.0		1732	0.8
																2145	0.7
09	0438	1.2	24	0432	1.1	09	0026	0.4	24	0451	0.9	09	0202	0.5	24	0000	0.7
	1239	0.3		1223	0.1		0536	1.2		0723	0.9		0651	1.0		0254	0.6
	1753	1.2		1754	1.3		1332	0.5		0951	1.0		1026	0.8		0504	0.7
				2323	0.5		1809	1.1		1351	0.5		1204	0.8		0658	0.6
										1817	1.0		1453	0.7		1204	1.1
										2313	0.6		1804	0.8		1621	0.8
													2047	0.8		2030	0.7
													2313	0.8			
10	0006	0.5	25	0443	1.0	10	0128	0.5	25	0447	0.8	10	0311	0.5	25	0030	0.9
	0511	1.2		0702	1.0		0621	1.0		0711	0.8		1206	0.9		0639	0.5
	1321	0.4		0821	1.0		1417	0.6		1109	1.0		1909	0.7		1253	1.2
	1821	1.1		1317	0.2		1849	0.9		1458	0.6					1858	0.6
				1834	1.1					1854	0.8						
				2354	0.6					2234	0.7						
11	0100	0.5	26	0430	0.9	11	0245	0.5	26	0045	0.7	11	0004	1.0	26	0051	1.0
	0602	1.1		0647	0.9		0741	0.9		0300	0.7		0423	0.4		0623	0.4
	1406	0.5		0954	1.0		1515	0.7		0447	0.7		1230	1.1		1323	1.3
	1902	1.0		1411	0.4		2345	0.9		0706	0.6		1932	0.6		1832	0.5
				1915	1.0					1213	1.1						
										1613	0.7						
										2151	0.7						
12	0209	0.6	27	0039	0.7	12	0402	0.5	27	0100	0.9	12	0047	1.1	27	0058	1.1
	0719	1.0		0426	0.8		1145	0.9		0706	0.5		0526	0.3		0638	0.3
	1456	0.5		0649	0.7		1815	0.7		1304	1.2		1256	1.2		1353	1.3
	2008	0.9		1104	1.0					1830	0.6		1956	0.5		1851	0.4
				1513	0.5												
				2017	0.9												
13	0338	0.5	28	0700	0.6	13	0034	1.0	28	0121	1.0	13	0121	1.2	28	0111	1.2
	0932	0.9		1211	1.1		0508	0.4		0654	0.4		0617	0.1		0709	0.1
	1554	0.6		1623	0.5		1228	1.1		1351	1.3		1326	1.3		1411	1.4

			2206	0.8		1934	0.6		1909	0.5		2015	0.4		1919	0.3	
			2300	0.8													
14	0000	1.0	29	0104	0.9	14	0108	1.1	29	0139	1.1	14	0156	1.4	29	0130	1.4
	0453	0.4		0708	0.5		0600	0.3		0708	0.2		0702	0.0		0743	0.1
	1115	1.0		1309	1.2		1304	1.2		1423	1.4		1354	1.4		1428	1.4
	1719	0.6		1739	0.5		2002	0.5		1921	0.4		2036	0.3		1953	0.2
15	0049	1.1	30	0138	1.0	15	0147	1.3	30	0149	1.2	15	0232	1.5	30	0156	1.5
	0547	0.3		0713	0.4		0641	0.1		0732	0.1		0743	-0.1		0815	0.1
	1213	1.1		1400	1.3		1343	1.3		1451	1.4		1423	1.5		1445	1.4
	1917	0.6		1845	0.5		2032	0.4		1947	0.3		2047	0.3		2024	0.1
			31	0156	1.1				31	0204	1.3						
				0721	0.2					0804	0.0						
				1447	1.4					1511	1.4						
				1934	0.4					2017	0.2						

2016

PORTO DE SANTOS - TORRE GRANDE

2016

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	DIA	H M	M
01	0221	1.5	16	0323	1.5	01	0304	1.5	16	0443	1.4	01	0328	1.5	16	0530	1.3
	0853	0.1		0849	-0.1		0932	0.3		0958	0.3		0938	0.4		1015	0.4
	1502	1.4		1441	1.4		1515	1.3		1509	1.2		1523	1.2		1532	1.2
	2102	0.1		2106	0.2		2156	0.1		2217	0.2		2215	0.1		2302	0.2
02	0253	1.6	17	0347	1.5	02	0339	1.5	17	0530	1.2	02	0404	1.4	17	0541	1.2
	0926	0.2		0932	0.0		0945	0.4		1038	0.4		0954	0.5		1056	0.5
	1519	1.4		1506	1.3		1536	1.3		1539	1.1		1543	1.2		1600	1.1
	2141	0.1		2139	0.2		2239	0.2		2309	0.3		2302	0.1		2354	0.2
03	0319	1.6	18	0417	1.4	03	0411	1.4	18	0624	1.1	03	0445	1.4	18	0549	1.1
	0958	0.3		1013	0.2		0945	0.5		1119	0.6		1021	0.5		1136	0.6
	1541	1.3		1534	1.2		1558	1.2		1602	1.1		1602	1.1		1634	1.1
	2219	0.1		2217	0.3		2324	0.2					2354	0.2			
04	0353	1.5	19	0426	1.2	04	0451	1.3	19	0008	0.3	04	0524	1.3	19	0047	0.3
	1030	0.4		1100	0.4		1008	0.6		0624	1.0		1054	0.6		0609	1.0
	1602	1.3		1600	1.1		1615	1.1		1206	0.7		1619	1.0		1219	0.6
	2300	0.2		2304	0.4					1626	1.0					1709	1.1
05	0423	1.4	20	0451	1.1	05	0015	0.3	20	0106	0.4	05	0047	0.2	20	0136	0.4
	0941	0.5		1151	0.6		0532	1.2		0941	0.9		0615	1.2		0651	1.0
	1623	1.2		1621	1.0		1034	0.6		1306	0.8		1141	0.7		1319	0.6
	2347	0.3					1632	1.0		1658	0.9		1615	0.9		1808	1.0
										2108	0.7		1854	0.9			
										2209	0.7		2051	0.9			
06	0500	1.3	21	0004	0.4	06	0108	0.3	21	0204	0.4	06	0141	0.3	21	0223	0.4
	0949	0.6		0511	0.9		0623	1.1		1053	1.0		0717	1.1		0758	0.9
	1649	1.1		0700	0.9		1139	0.7		1423	0.8		1254	0.7		1438	0.6
				0909	1.0		1611	0.9		1826	0.9		1600	0.8		1956	0.9
				1249	0.7		1915	0.8		2243	0.8		1819	0.8			
				1641	1.0		2145	0.8					2202	1.0			
				2100	0.6												
				2217	0.6												
07	0038	0.4	22	0113	0.5	07	0206	0.4	22	0304	0.5	07	0239	0.3	22	0317	0.5
	0539	1.2		0653	0.8		0747	1.0		1138	1.0		0839	1.1		1106	0.9
	1008	0.7		1045	1.0		1411	0.8		1549	0.7		1438	0.7		1553	0.5
	1704	1.0		1402	0.8		1847	0.7		2234	0.9		1558	0.8		2200	1.0
				1647	0.9		2247	1.0					1836	0.7			
				2104	0.7								2258	1.1			
				2308	0.7												
08	0136	0.4	23	0234	0.5	08	0306	0.3	23	0406	0.4	08	0339	0.3	23	0419	0.5
	0630	1.0		1143	1.1		0949	1.0		1204	1.1		1000	1.1		1158	1.0
	1026	0.8		1654	0.8		1856	0.6		1651	0.5		1854	0.6		1656	0.4
	1213	0.8		1953	0.8		2334	1.1		2309	1.0		2351	1.2		2311	1.1
	1356	0.8		2347	0.8												
	1651	0.8															
	2002	0.8															
	2236	0.8															
09	0238	0.4	24	0354	0.5	09	0411	0.3	24	0509	0.4	09	0445	0.3	24	0534	0.5
	0808	0.9		1219	1.1		1126	1.1		1234	1.1		1111	1.1		1241	1.1
	1017	0.9		1730	0.7		1909	0.5		1738	0.4		1906	0.5		1749	0.3
	1154	0.9		2356	1.0					2347	1.2						
	1904	0.7															
	2328	0.9															
10	0345	0.4	25	0508	0.4	10	0017	1.2	25	0609	0.4	10	0045	1.3	25	0004	1.2
	1200	1.0		1251	1.2		0515	0.2		1300	1.2		0547	0.2		0643	0.5
	1911	0.6		1743	0.5		1211	1.2		1819	0.3		1211	1.2		1317	1.2
							1932	0.4					1915	0.4		1832	0.2
11	0009	1.1	26	0006	1.1	11	0102	1.3	26	0024	1.3	11	0139	1.4	26	0051	1.2
	0451	0.3		0600	0.3		0611	0.1		0658	0.3		0641	0.2		0732	0.4
	1228	1.2		1311	1.2		1243	1.3		1332	1.3		1254	1.2		1353	1.3
	1938	0.5		1815	0.4		1939	0.3		1858	0.2		1924	0.3		1911	0.1
12	0051	1.2	27	0026	1.2	12	0147	1.4	27	0102	1.3	12	0234	1.4	27	0132	1.3
	0549	0.1		0641	0.3		0702	0.0		0739	0.3		0730	0.2		0809	0.4
	1254	1.3		1334	1.3		1317	1.3		1400	1.3		1332	1.2		1426	1.3
	1954	0.4		1851	0.3		1945	0.2		1936	0.1		1954	0.2		1951	0.1
13	0130	1.4	28	0056	1.3	13	0234	1.5	28	0143	1.4	13	0324	1.5	28	0209	1.4
	0638	0.0		0719	0.2		0747	0.0		0815	0.3		0815	0.2		0841	0.4
	1323	1.4		1354	1.3		1347	1.3		1428	1.3		1408	1.2		1454	1.3
	2009	0.3		1923	0.1		2013	0.2		2013	0.0		2034	0.1		2028	0.0
14	0208	1.5	29	0126	1.4	14	0321	1.5	29	0217	1.5	14	0409	1.5	29	0249	1.4

2016

CANANEIA - BASE SUL DO IOUSP

2016

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		HORA	ALT	
DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M
01	0821	1.1	16	0230	0.4	01	0034	0.6	16	0615	0.6	01	0311	0.9	16	0019	0.9
	1234	0.6		0754	1.2		0345	0.8		0941	0.9		0600	0.7		0254	1.0
	2006	1.0		1143	0.5		0558	0.7		1256	0.6		0906	1.0		0636	0.6
				1509	1.0		0947	1.0		1602	0.9		1324	0.6		0926	0.8
				1804	0.8		1413	0.6		1915	0.6		2039	1.1		1241	0.6
				2130	1.1		2126	1.1		2345	1.1					1549	0.8
																1856	0.6
																2319	1.1
02	0049	0.6	17	0434	0.5	02	0126	0.7	17	0708	0.6	02	0023	0.7	17	0711	0.6
	0924	1.1		0853	1.1		0345	0.8		1100	0.9		0319	0.9		1054	0.9
	1341	0.6		1224	0.6		0649	0.6		1423	0.7		0641	0.6		1415	0.7
	2119	1.0		1547	1.0		1058	1.1		1608	0.8		1023	1.0		1553	0.7
				1854	0.7		1728	0.5		1953	0.5		1658	0.5		1926	0.5
				2245	1.1		2239	1.1					2153	1.1			
03	0200	0.6	18	0553	0.5	03	0726	0.5	18	0047	1.2	03	0117	0.8	18	0028	1.2
	0354	0.7		0958	1.0		1202	1.1		0747	0.5		0319	0.9		0736	0.6
	0553	0.6		1321	0.7		1817	0.4		1217	1.0		0711	0.5		1202	1.0
	1034	1.1		1609	0.9		2343	1.2		2011	0.4		1138	1.1		1951	0.4
	1636	0.6		1928	0.6								1758	0.4			
	2226	1.1		2354	1.2								2304	1.2			
04	0643	0.6	19	0654	0.5	04	0800	0.5	19	0130	1.3	04	0747	0.4	19	0109	1.3
	1138	1.2		1111	1.0		1258	1.2		0758	0.5		1236	1.2		0726	0.5
	1749	0.5		1502	0.7		1900	0.2		1315	1.2		1847	0.2		1256	1.2
	2323	1.2		1623	0.7					2028	0.3					1958	0.3
				2000	0.5												
05	0723	0.5	20	0051	1.3	05	0039	1.3	20	0208	1.4	05	0011	1.3	20	0149	1.4
	1232	1.2		0743	0.5		0838	0.4		0749	0.4		0817	0.4		0715	0.4
	1828	0.3		1228	1.1		1347	1.3		1400	1.3		1324	1.3		1339	1.3
				2028	0.4		1941	0.1		2026	0.2		1928	0.0		1956	0.3
06	0015	1.3	21	0139	1.4	06	0128	1.4	21	0247	1.5	06	0106	1.5	21	0221	1.5
	0800	0.5		0813	0.5		0908	0.4		0758	0.3		0851	0.3		0732	0.3
	1319	1.3		1326	1.2		1432	1.4		1443	1.4		1409	1.4		1415	1.4
	1906	0.2		2045	0.3		2021	0.0		2028	0.2		2009	-0.1		2008	0.2
07	0104	1.4	22	0221	1.4	07	0215	1.5	22	0321	1.5	07	0156	1.6	22	0256	1.6
	0834	0.5		0821	0.5		0938	0.4		0821	0.2		0919	0.3		0800	0.1
	1404	1.4		1413	1.3		1513	1.5		1515	1.4		1454	1.5		1453	1.4
	1947	0.1		2036	0.3		2102	-0.1		2047	0.1		2053	-0.1		2024	0.2
08	0151	1.4	23	0302	1.5	08	0300	1.6	23	0358	1.6	08	0241	1.6	23	0330	1.6
	0853	0.5		0819	0.4		0928	0.4		0854	0.2		0932	0.4		0832	0.1
	1449	1.4		1458	1.3		1556	1.5		1551	1.4		1536	1.6		1524	1.5
	2024	0.0		2032	0.2		2143	-0.1		2109	0.1		2130	-0.1		2049	0.2
09	0236	1.5	24	0345	1.5	09	0347	1.6	24	0434	1.5	09	0323	1.6	24	0402	1.5
	0836	0.5		0839	0.4		0853	0.4		0923	0.1		0832	0.4		0904	0.0
	1530	1.4		1539	1.4		1639	1.5		1619	1.4		1615	1.6		1558	1.5
	2106	0.0		2056	0.2		2219	-0.1		2134	0.1		2204	0.0		2109	0.2
10	0319	1.6	25	0419	1.5	10	0426	1.6	25	0506	1.5	10	0404	1.6	25	0438	1.4
	0838	0.5		0906	0.3		0908	0.4		0958	0.1		0847	0.3		0938	0.1
	1611	1.4		1609	1.4		1717	1.4		1651	1.4		1658	1.5		1630	1.5
	2151	0.0		2123	0.2		2256	0.0		2158	0.2		2230	0.1		2132	0.2
11	0402	1.6	26	0458	1.5	11	0508	1.5	26	0543	1.4	11	0451	1.5	26	0508	1.3
	0858	0.4		0941	0.2		0936	0.3		1030	0.2		0909	0.3		1008	0.1
	1656	1.4		1643	1.3		1802	1.3		1719	1.3		1743	1.4		1702	1.4
	2232	0.0		2154	0.2		2326	0.2		2221	0.2		2249	0.3		2156	0.2
12	0447	1.6	27	0538	1.4	12	0554	1.4	27	0617	1.2	12	0534	1.3	27	0545	1.2
	0923	0.4		1011	0.2		1004	0.3		1102	0.2		0947	0.2		1045	0.2
	1739	1.3		1709	1.3		1413	0.9		1754	1.3		1826	1.3		1738	1.4
	2315	0.1		2221	0.2		1506	0.9		2249	0.3		2300	0.4		2217	0.3
							1853	1.2									
							2353	0.4									
13	0528	1.5	28	0611	1.3	13	0641	1.3	28	0702	1.1	13	0615	1.2	28	0624	1.1
	0954	0.4		1051	0.3		1043	0.3		1139	0.3		1017	0.3		1117	0.3
	1824	1.2		1739	1.2		1436	1.0		1838	1.2		1415	0.9		1815	1.3
				2253	0.3		1649	0.9		2313	0.4		1602	0.9		2249	0.4
							1951	1.1					1919	1.2			
													2317	0.6			
14	0002	0.2	29	0654	1.2	14	0013	0.6	29	0315	0.9	14	0213	0.8	29	0251	1.0
	0611	1.5		1123	0.3		0728	1.1		0458	0.9		0408	0.8		0502	0.9
	1024	0.4		1813	1.2		1117	0.4		0758	1.0		0706	1.0		0723	1.0

1413	0.9	2319	0.4	1504	1.0	1219	0.5	1100	0.3	1202	0.4			
1600	0.9			1753	0.8	1934	1.1	1453	0.9	1902	1.2			
1917	1.1			2058	1.0	2350	0.6	1711	0.8	2311	0.5			
								2023	1.1					
								2349	0.7					
15	0054	0.3	30	0743	1.1	15	0047	0.7	15	0236	0.9	30	0254	1.0
	0700	1.3		1202	0.4		0228	0.8		0539	0.7		0556	0.8
	1100	0.4		1906	1.1		0504	0.7		0808	0.9		0843	0.9
	1445	1.0		2356	0.5		0826	1.0		1145	0.4		1321	0.5
	1708	0.8					1200	0.5		1517	0.9		2000	1.2
	2017	1.1					1538	1.0		1808	0.7		2351	0.7
							1841	0.7		2149	1.0			
							2217	1.0						
			31	0443	0.8							31	0258	1.0
				0839	1.1								0624	0.6
				1254	0.5								1002	0.9
				2013	1.0								1617	0.5
													2108	1.1

	2358	0.8															
14	0256	1.1	29	0243	1.0	14	0049	0.8	29	0254	1.0	14	0551	0.6	29	0119	0.8
	0634	0.7		0604	0.7		0326	0.9		0611	0.6		1100	1.1		0339	0.9
	0911	0.8		0941	0.9		0653	0.7		1009	1.1		1615	0.6		0702	0.5
	1238	0.6		1539	0.4		1002	0.9		1611	0.3					1124	1.2
	1532	0.7		2038	1.2		1413	0.6		2106	1.3					1806	0.4
	1809	0.6					1611	0.6								2300	1.1
	2224	1.0					1741	0.6									
							2245	1.1									
15	0102	0.9	30	0008	0.8	15	0654	0.6	30	0053	0.8	15	0002	1.2	30	0736	0.4
	0302	1.0		0253	1.0		1100	1.0		0302	0.9		0558	0.4		1217	1.3
	0702	0.6		0634	0.5		1811	0.6		0645	0.5		1145	1.2		1917	0.4
	1036	0.9		1045	1.1		2354	1.2		1102	1.2		1911	0.6			
	1541	0.7		1651	0.3					1715	0.2						
	1853	0.5		2147	1.2					2215	1.3						
	2349	1.1															
									31	0709	0.4						
										1151	1.3						
										1819	0.2						
										2335	1.3						

2016

CANANEIA - BASE SUL DO IOUSP

2016

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					
DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA	
	H	M		H	M		H	M		H	M		H	M		H	M
01	0013	1.2	16	0111	1.3	01	0158	1.3	16	0215	1.4	01	0256	1.5	16	0308	1.6
	0802	0.4		0651	0.2		0834	0.2		0754	-0.1		0821	0.1		0858	-0.1
	1311	1.4		1239	1.3		1449	1.4		1354	1.5		1549	1.5		1502	1.6
	2019	0.4		2051	0.5		2054	0.5		2132	0.4		2043	0.2		2054	0.4
02	0115	1.2	17	0154	1.4	02	0239	1.4	17	0254	1.5	02	0326	1.5	17	0349	1.6
	0830	0.3		0724	0.0		0824	0.2		0832	-0.1		0845	0.1		0934	-0.1
	1408	1.4		1328	1.4		1532	1.5		1443	1.5		1624	1.5		1549	1.6
	2108	0.4		2117	0.5		2045	0.4		2139	0.4		2109	0.1		2049	0.3
03	0206	1.3	18	0234	1.4	03	0313	1.4	18	0332	1.5	03	0356	1.4	18	0424	1.5
	0830	0.3		0800	0.0		0834	0.2		0909	-0.1		0906	0.1		1006	0.1
	1502	1.5		1417	1.4		1611	1.5		1526	1.6		1700	1.5		1632	1.5
	2134	0.5		2134	0.5		2102	0.3		2111	0.4		2145	0.1		2106	0.3
04	0253	1.3	19	0309	1.4	04	0351	1.4	19	0408	1.5	04	0423	1.4	19	0506	1.4
	0808	0.2		0839	-0.1		0900	0.2		0951	-0.1		0934	0.2		1028	0.2
	1553	1.5		1504	1.5		1653	1.5		1609	1.6		1739	1.4		1711	1.4
	2111	0.5		2115	0.5		2128	0.3		2109	0.4		2213	0.1		2136	0.3
05	0332	1.3	20	0349	1.4	05	0417	1.4	20	0449	1.4	05	0451	1.3	20	0556	1.3
	0830	0.2		0919	-0.1		0926	0.2		1028	0.0		1000	0.2		1047	0.4
	1636	1.5		1553	1.5		1728	1.5		1654	1.6		1811	1.3		1758	1.3
	2113	0.5		2108	0.5		2200	0.2		2130	0.3		2251	0.2		2204	0.3
06	0406	1.3	21	0426	1.4	06	0445	1.3	21	0528	1.3	06	0524	1.2	21	0217	0.9
	0904	0.2		1004	0.0		1000	0.2		1108	0.1		1026	0.3		0319	0.9
	1713	1.5		1634	1.6		1804	1.4		1736	1.5		1851	1.2		0654	1.2
	2143	0.4		2124	0.4		2234	0.2		2158	0.3		2319	0.3		1102	0.6
																1400	0.7
																1500	0.7
																1847	1.1
																2243	0.3
07	0445	1.2	22	0504	1.3	07	0504	1.2	22	0615	1.2	07	0609	1.2	22	0226	0.9
	0941	0.2		1053	0.0		1028	0.3		1141	0.3		1058	0.4		0453	0.8
	1756	1.5		1711	1.6		1843	1.3		1815	1.4		1515	0.9		0800	1.1
	2209	0.3		2151	0.4		2306	0.3		2226	0.3		1611	0.9		1126	0.7
													1936	1.1		1404	0.9
													2358	0.4		1647	0.7
																1939	1.0
																2315	0.4
08	0511	1.2	23	0553	1.2	08	0530	1.1	23	0234	1.0	08	0713	1.1	23	0254	0.9
	1017	0.3		1141	0.1		1102	0.4		0411	0.9		1130	0.5		0549	0.7
	1832	1.4		1756	1.6		1919	1.2		0715	1.1		1511	0.9		0915	1.0
	2249	0.3		2215	0.4		2343	0.4		1209	0.5		1743	0.8		1202	0.9
										1900	1.2		2036	1.0		1432	1.0
										2300	0.3					1758	0.7
																2047	0.9
09	0313	1.1	24	0647	1.1	09	0641	1.0	24	0251	1.0	09	0049	0.6	24	0002	0.6
	1100	0.3		1236	0.2		1139	0.5		0523	0.8		0826	1.0		0309	0.9
	1908	1.3		1838	1.5		2004	1.1		0828	1.0		1208	0.7		0626	0.5
	2321	0.4		2251	0.4					1241	0.7		1523	0.9		1043	1.1
										1402	0.7		1830	0.7		1306	1.0
										1600	0.7		2156	0.9		1445	1.0
										1954	1.1					1854	0.6
										2338	0.4					2208	0.9
10	0336	1.1	25	0243	1.0	10	0021	0.5	25	0308	1.0	10	0500	0.5	25	0109	0.7
	1147	0.4		0458	0.9		0804	1.0		0609	0.7		0941	1.1		0311	0.8
	1954	1.2		0754	1.1		1217	0.6		0951	1.0		1302	0.8		0700	0.4
				1343	0.4		1600	0.8		1736	0.7		1534	0.9		1153	1.2
				1919	1.3		1734	0.8		2056	0.9		1906	0.6		1928	0.6
				2319	0.4		2106	1.0					2323	1.0		2345	1.0
11	0002	0.5	26	0300	1.0	11	0123	0.6	26	0015	0.6	11	0549	0.4	26	0726	0.3
	0404	1.0		0551	0.8		0917	1.0		0330	0.9		1047	1.2		1241	1.3
	0606	0.9		0902	1.1		1306	0.7		0651	0.5		1943	0.5		1947	0.6
	0758	0.9		1523	0.5		1600	0.8		1102	1.1						
	1234	0.5		2009	1.2		1841	0.7		1845	0.6						
	2049	1.1					2230	1.0		2215	0.9						
12	0058	0.6	27	0000	0.5	12	0536	0.5	27	0121	0.7	12	0028	1.2	27	0043	1.2
	0434	0.8		0319	1.0		1021	1.1		0338	0.8		0626	0.2		0745	0.3
	0558	0.8		0624	0.7		1411	0.8		0717	0.4		1145	1.3		1321	1.4
	0909	1.0		1008	1.1		1602	0.8		1208	1.2		2008	0.4		1924	0.5
	1326	0.6		1658	0.5		1924	0.6		1936	0.6						

2016

CANANEIA - BASE SUL DO IOUSP

2016

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					
DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M
01	0302	1.5	16	0323	1.6	01	0347	1.5	16	0438	1.5	01	0402	1.5	16	0506	1.5
	0819	0.2		0917	0.0		0847	0.3		0924	0.5		0856	0.4		0928	0.5
	1556	1.5		1523	1.5		1639	1.3		1638	1.3		1654	1.3		1702	1.2
	2053	0.1		2021	0.3		2141	0.1		2102	0.3		2206	0.1		2141	0.3
02	0334	1.5	17	0404	1.6	02	0419	1.5	17	0523	1.4	02	0443	1.5	17	0554	1.4
	0845	0.2		0943	0.2		0909	0.3		0945	0.5		0921	0.4		1000	0.5
	1632	1.5		1606	1.4		1713	1.2		1721	1.2		1734	1.2		1445	0.9
	2123	0.1		2045	0.3		2213	0.1		2141	0.3		2251	0.1		1747	1.1
03	0402	1.5	18	0453	1.5	03	0458	1.4	18	0611	1.3	03	0521	1.4	18	0639	1.3
	0906	0.2		0954	0.4		0939	0.3		1008	0.6		0956	0.4		1038	0.5
	1706	1.4		1656	1.3		1753	1.1		1323	0.9		1815	1.1		1421	1.0
	2158	0.1		2111	0.2		2254	0.2		1521	0.9		2338	0.2		1609	1.0
04	0438	1.4	19	0541	1.4	04	0539	1.3	19	0702	1.2	04	0602	1.4	19	0724	1.2
	0934	0.3		1006	0.5		1006	0.4		1049	0.6		1024	0.5		1113	0.5
	1743	1.3		1743	1.2		1421	1.0		1404	1.0		1434	1.0		1504	1.0
	2230	0.2		2151	0.3		1604	0.9		1649	0.9		1632	0.9		1728	0.9
05	0509	1.3	20	0634	1.2	05	0623	1.3	20	0228	0.7	05	0041	0.3	20	0815	1.1
	1000	0.3		1026	0.6		1041	0.5		0402	0.7		0654	1.3		1202	0.6
	1819	1.1		1330	0.9		1430	1.0		0800	1.1		1102	0.5		1551	1.0
	2302	0.2		1534	0.8		1709	0.9		1126	0.7		1449	1.0		1815	0.9
06	0554	1.3	21	0208	0.8	06	0045	0.4	21	0300	0.7	06	0217	0.3	21	0036	0.6
	1026	0.4		0358	0.7		0715	1.2		0504	0.6		0747	1.3		0353	0.7
	1441	1.0		0732	1.1		1113	0.6		0902	1.1		1147	0.6		0515	0.7
	1626	0.9		1100	0.7		1447	1.0		1219	0.7		1500	0.9		0917	1.1
07	0647	1.2	22	0236	0.8	07	0308	0.4	22	0109	0.6	07	0349	0.3	22	0149	0.6
	1100	0.5		0500	0.7		0815	1.2		0315	0.7		0847	1.3		0402	0.7
	1449	1.0		0843	1.0		1200	0.7		0556	0.6		1238	0.7		0606	0.6
	1734	0.8		1141	0.8		1458	0.9		1009	1.1		1511	0.9		1026	1.1
08	0036	0.5	23	0000	0.6	08	0432	0.3	23	0634	0.5	08	0456	0.3	23	0651	0.6
	0751	1.1		0258	0.8		0921	1.2		1117	1.1		0951	1.3		1134	1.1
	1138	0.6		0556	0.6		1302	0.8		1834	0.7		1349	0.8		1706	0.5
	1500	1.0		0958	1.0		1502	0.9		2334	1.1		1523	0.8		2336	1.1
09	0408	0.5	24	0119	0.7	09	0526	0.2	24	0653	0.5	09	0556	0.2	24	0715	0.5
	0858	1.1		0300	0.7		1028	1.3		1213	1.2		1056	1.3		1228	1.2
	1221	0.8		0634	0.5		1911	0.5		1747	0.5		1924	0.5		1802	0.4
	1506	1.0		1106	1.1												
10	0511	0.3	25	0700	0.4	10	0004	1.3	25	0017	1.2	10	0017	1.3	25	0021	1.2
	1004	1.2		1204	1.2		0617	0.1		0656	0.4		0653	0.2		0739	0.5
	1341	0.9		1913	0.6		1132	1.4		1300	1.3		1200	1.3		1315	1.3
	1502	0.9					1945	0.4		1821	0.3		2000	0.4		1845	0.2
11	0600	0.2	26	0009	1.1	11	0051	1.4	26	0058	1.3	11	0106	1.4	26	0104	1.3
	1108	1.3		0717	0.4		0704	0.0		0704	0.4		0747	0.2		0753	0.5
	1941	0.4		1253	1.3		1228	1.4		1345	1.4		1300	1.3		1400	1.4

			1830	0.5		2011	0.4		1858	0.2		2036	0.3		1923	0.1	
12	0045	1.3	27	0056	1.3	12	0132	1.5	27	0136	1.4	12	0158	1.5	27	0147	1.4
	0643	0.0		0717	0.3		0751	0.0		0719	0.4		0838	0.2		0753	0.5
	1206	1.4		1334	1.4		1323	1.5		1423	1.4		1356	1.4		1441	1.4
	2006	0.4		1849	0.3		2039	0.3		1938	0.1		2106	0.3		2002	0.0
13	0123	1.4	28	0130	1.4	13	0215	1.5	28	0209	1.4	13	0249	1.5	28	0226	1.4
	0723	-0.1		0719	0.3		0836	0.1		0739	0.4		0923	0.3		0804	0.5
	1300	1.5		1409	1.5		1411	1.5		1500	1.4		1447	1.4		1519	1.4
	2038	0.3		1919	0.2		2039	0.4		2011	0.0		2121	0.3		2041	0.0
14	0202	1.5	29	0202	1.4	14	0302	1.6	29	0249	1.5	14	0338	1.5	29	0306	1.5
	0804	-0.1		0736	0.2		0913	0.2		0802	0.4		0930	0.5		0821	0.4
	1351	1.6		1451	1.5		1502	1.4		1539	1.4		1534	1.3		1600	1.4
	2056	0.3		1956	0.1		2008	0.3		2053	0.0		2036	0.3		2117	0.0
15	0243	1.6	30	0239	1.5	15	0351	1.6	30	0324	1.5	15	0421	1.5	30	0347	1.5
	0843	-0.1		0758	0.2		0928	0.4		0826	0.4		0909	0.5		0847	0.4
	1438	1.6		1526	1.5		1551	1.4		1615	1.3		1617	1.3		1639	1.3
	2034	0.4		2030	0.0		2026	0.3		2126	0.0		2104	0.3		2200	0.0
			31	0309	1.5										31	0424	1.5
				0819	0.2											0911	0.4
				1602	1.4											1717	1.3
				2104	0.0											2243	0.0

2017

UBATUBA - BASE NORTE DO IOUSP

2017

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	DIA	H M	M
01	0402	1.1	16	0406	1.0	01	0004	0.1	16	0026	0.3	01	0343	1.1	16	0354	1.1
	1109	0.4		1141	0.4		0447	1.0		0456	1.0		1100	0.3		1111	0.3
	1556	1.0		1609	1.1		1206	0.4		1221	0.4		1551	1.2		1609	1.1
	2345	0.1					1643	1.0		1711	1.0		2345	0.1		2353	0.4
02	0438	1.0	17	0019	0.2	02	0054	0.2	17	0104	0.4	02	0409	1.0	17	0423	1.0
	1153	0.4		0447	0.9		0515	0.9		0528	0.9		1143	0.3		1154	0.3
	1624	1.0		1215	0.5		1256	0.4		1311	0.4		1617	1.1		1649	1.0
				1656	1.0		1713	0.9		1758	0.9						
03	0030	0.2	18	0104	0.3	03	0149	0.3	18	0156	0.5	03	0030	0.3	18	0026	0.5
	0517	1.0		0523	0.9		0554	0.8		0606	0.8		0439	0.9		0453	0.9
	1238	0.5		1300	0.5		1354	0.5		1413	0.4		1230	0.4		1247	0.4
	1700	0.9		1745	1.0		1800	0.9		1854	0.8		1656	1.0		1723	0.9
							2021	0.8		2200	0.7						
							2209	0.8		2330	0.7						
04	0119	0.2	19	0154	0.4	04	0249	0.4	19	0256	0.6	04	0121	0.4	19	0108	0.6
	0602	0.9		0609	0.8		0634	0.7		0700	0.7		0506	0.8		0509	0.8
	1328	0.5		1356	0.5		0841	0.7		1053	0.7		1330	0.4		1347	0.4
	1741	0.9		1839	0.9		1100	0.8		1523	0.4		1734	0.9		1808	0.8
							1502	0.5					2002	0.7		2121	0.7
							1900	0.7					2221	0.8		2258	0.7
							2023	0.7									
							2336	0.9									
05	0213	0.3	20	0249	0.5	05	0358	0.5	20	0006	0.8	05	0223	0.5	20	0206	0.6
	0653	0.8		0708	0.8		0856	0.6		0404	0.6		0545	0.8		0526	0.8
	0758	0.8		1458	0.5		1200	0.8		1143	0.8		0839	0.6		1453	0.4
	0958	0.8		1958	0.8		1623	0.4		1638	0.4		1100	0.7		2343	0.8
	1426	0.5		2343	0.7								1447	0.5			
	1836	0.8											1824	0.7			
	2002	0.8											2008	0.7			
	2209	0.8											2336	0.9			
06	0313	0.3	21	0351	0.5	06	0034	1.0	21	0041	0.9	06	0345	0.6	21	0315	0.6
	1106	0.9		0902	0.8		0519	0.5		0524	0.5		0621	0.7		0556	0.7
	1534	0.5		1608	0.4		1251	0.8		1213	0.8		0858	0.6		0756	0.7
	2330	0.9					1745	0.3		1741	0.3		1158	0.7		1119	0.7
													1608	0.4		1600	0.4
07	0421	0.3	22	0017	0.8	07	0121	1.1	22	0104	1.0	07	0024	1.0	22	0011	0.9
	1202	0.9		0458	0.5		0638	0.4		0630	0.5		0526	0.6		0445	0.6
	1647	0.4		1141	0.8		1324	0.9		1236	0.9		1239	0.8		1154	0.8
				1713	0.3		1849	0.2		1836	0.2		1734	0.3		1706	0.3
08	0032	1.0	23	0045	0.9	08	0206	1.1	23	0126	1.0	08	0108	1.1	23	0041	1.0
	0532	0.3		0602	0.5		0732	0.4		0715	0.4		0639	0.5		0602	0.5
	1254	0.9		1209	0.9		1351	0.9		1302	1.0		1308	0.9		1223	0.9
	1754	0.3		1811	0.2		1939	0.1		1923	0.1		1836	0.2		1804	0.2
09	0124	1.1	24	0104	1.0	09	0249	1.2	24	0145	1.1	09	0151	1.1	24	0104	1.1
	0639	0.3		0653	0.4		0813	0.3		0756	0.3		0719	0.4		0647	0.4
	1336	0.9		1232	1.0		1328	1.0		1328	1.1		1324	0.9		1251	1.0
	1856	0.2		1902	0.1		2024	0.0		2008	0.0		1923	0.1		1858	0.1
10	0211	1.1	25	0123	1.0	10	0315	1.1	25	0206	1.2	10	0219	1.1	25	0130	1.1
	0736	0.3		0738	0.4		0854	0.3		0834	0.3		0756	0.3		0724	0.3
	1402	0.9		1304	1.0		1330	1.0		1358	1.1		1304	1.0		1317	1.1
	1949	0.1		1949	0.1		2106	0.0		2054	-0.1		2006	0.0		1945	0.0
11	0300	1.2	26	0141	1.1	11	0323	1.1	26	0228	1.2	11	0238	1.1	26	0151	1.2
	0824	0.3		0817	0.3		0930	0.3		0908	0.2		0830	0.3		0802	0.2
	1326	0.9		1334	1.1		1402	1.1		1426	1.2		1313	1.1		1345	1.2
	2039	0.0		2032	0.0		2153	0.0		2136	-0.1		2051	0.0		2026	-0.1
12	0343	1.1	27	0211	1.1	12	0247	1.1	27	0251	1.2	12	0215	1.1	27	0211	1.2
	0909	0.3		0858	0.3		1002	0.3		0947	0.2		0900	0.2		0841	0.2
	1336	1.0		1408	1.1		1439	1.2		1456	1.2		1347	1.2		1409	1.2
	2123	0.0		2113	0.0		2232	0.0		2215	-0.1		2128	0.0		2108	-0.1
13	0409	1.1	28	0239	1.2	13	0311	1.1	28	0317	1.2	13	0217	1.1	28	0226	1.2
	0954	0.3		0936	0.3		1036	0.3		1023	0.2		0936	0.2		0917	0.2
	1408	1.1		1441	1.1		1513	1.2		1523	1.2		1419	1.2		1434	1.2
	2208	0.0		2158	-0.1		2309	0.1		2258	0.0		2204	0.1		2154	0.0
14	0313	1.0	29	0311	1.2	14	0345	1.0				14	0247	1.1	29	0245	1.1
	1032	0.4		1009	0.3		1104	0.3					1004	0.2		0958	0.2
	1451	1.1		1513	1.1		1556	1.2					1500	1.2		1500	1.2
	2254	0.0		2241	0.0		2351	0.2					2245	0.2		2238	0.1
15	0334	1.0	30	0343	1.1	15	0415	1.0				15	0317	1.1	30	0308	1.1

1106	0.4	1049	0.3	1141	0.4	1038	0.2	1039	0.2
1528	1.1	1543	1.1	1634	1.1	1536	1.2	1524	1.2
2339	0.1	2321	0.0			2315	0.3	2321	0.2
		31 0413	1.1					31 0338	1.0
		1126	0.4					1123	0.3
		1611	1.1					1600	1.1

2319	0.4	2354	0.4	2334	0.5	1811	0.8	1726	0.8								
						2009	0.9	2008	0.7								
								2147	0.7								
15	0358	1.0	30	0339	0.9	15	0400	0.9	30	0024	0.6	15	0041	0.5	30	0123	0.6
	1134	0.3		1204	0.2		1200	0.2		0402	0.9		0451	0.9		0539	0.9
	1624	1.0		1619	0.9		1649	1.0		1253	0.2		1321	0.3		1413	0.4
	2356	0.5		1851	0.8					1702	0.8		1811	0.9		1815	0.8
				2047	0.9					1900	0.8					2058	0.7
										2128	0.9					2243	0.7
										31	0115	0.6					
											0453	0.9					
											1353	0.3					
											1756	0.8					
											1941	0.7					
											2228	0.8					

2017

UBATUBA - BASE NORTE DO IOUSP

2017

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					
DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M
01	0215	0.5	16	0154	0.5	01	0343	0.4	16	0345	0.4	01	0002	0.8	16	0053	0.9
	0645	0.9		0606	0.8		0858	0.8		1202	1.0		0521	0.3		0604	0.2
	1515	0.4		1445	0.3		1008	0.8		1639	0.5		1258	0.9		1326	1.1
	1921	0.8		1911	0.8		1221	0.8					1830	0.5		1858	0.4
	2139	0.7		2004	0.8		1639	0.6									
2317	0.7	2226	0.8	2345	0.8												
02	0321	0.5	17	0256	0.5	02	0456	0.4	17	0021	0.8	02	0024	0.9	17	0117	0.9
	0804	0.8		0715	0.8		1251	0.9		0504	0.4		0617	0.2		0658	0.1
	1154	0.7		1056	0.8		1753	0.5		1258	1.1		1317	1.0		1402	1.1
	1621	0.5		1547	0.3					1804	0.5		1908	0.4		1936	0.4
	2102	0.8		2336	0.9												
	2202	0.8															
	2349	0.8															
03	0434	0.4	18	0404	0.4	03	0006	0.9	18	0104	0.9	03	0049	1.0	18	0124	1.0
	0945	0.8		1202	0.9		0558	0.3		0615	0.2		0706	0.1		0747	0.0
	1109	0.8		1654	0.4		1309	0.9		1347	1.2		1332	1.1		1434	1.1
	1726	0.5					1847	0.5		1906	0.4		1941	0.3		2008	0.3
	2338	0.8															
04	0538	0.4	19	0026	0.9	04	0024	0.9	19	0139	0.9	04	0113	1.1	19	0109	1.1
	1221	0.9		0517	0.3		0649	0.2		0711	0.1		0753	0.0		0828	0.0
	1823	0.4		1300	1.0		1326	1.0		1424	1.2		1347	1.1		1432	1.1
	2341	0.9		1804	0.3		1930	0.4		1954	0.3		2015	0.3		2045	0.2
05	0630	0.3	20	0109	0.9	05	0053	1.0	20	0153	1.0	05	0143	1.1	20	0128	1.2
	1223	0.9		0624	0.2		0734	0.1		0802	0.0		0836	-0.1		0908	0.0
	1908	0.4		1354	1.1		1336	1.1		1502	1.2		1409	1.2		1406	1.1
		1906	0.3	2006	0.3	2034	0.3	2053	0.2	2115	0.2						
06	0019	1.0	21	0151	0.9	06	0121	1.1	21	0132	1.0	06	0211	1.2	21	0202	1.2
	0713	0.2		0723	0.1		0815	0.0		0849	-0.1		0913	-0.1		0951	0.1
	1253	1.0		1441	1.2		1358	1.1		1528	1.1		1432	1.2		1424	1.1
	1951	0.3		2000	0.3		2045	0.3		2108	0.3		2126	0.2		2149	0.2
07	0054	1.0	22	0211	0.9	07	0156	1.1	22	0149	1.1	07	0241	1.2	22	0239	1.3
	0756	0.1		0811	0.0		0858	0.0		0932	-0.1		0956	-0.1		1028	0.1
	1326	1.1		1523	1.2		1424	1.2		1443	1.1		1500	1.2		1458	1.1
	2028	0.3		2051	0.3		2119	0.3		2147	0.3		2200	0.2		2223	0.2
08	0128	1.1	23	0138	1.0	08	0226	1.1	23	0219	1.2	08	0308	1.2	23	0313	1.2
	0839	0.0		0900	0.0		0941	0.0		1011	0.0		1039	0.0		1102	0.3
	1402	1.1		1600	1.1		1454	1.2		1456	1.1		1524	1.1		1530	1.1
	2104	0.3		2134	0.3		2154	0.3		2217	0.3		2239	0.2		2256	0.3
09	0204	1.1	24	0200	1.0	09	0300	1.2	24	0258	1.2	09	0336	1.2	24	0354	1.2
	0917	0.0		0951	-0.1		1019	0.0		1054	0.1		1117	0.1		1139	0.4
	1436	1.2		1626	1.1		1524	1.2		1521	1.0		1554	1.1		1604	1.0
	2143	0.3		2209	0.3		2228	0.3		2251	0.3		2317	0.3		2339	0.3
10	0239	1.1	25	0232	1.1	10	0330	1.1	25	0336	1.2	10	0404	1.1	25	0430	1.1
	1000	0.0		1036	0.0		1100	0.0		1134	0.2		1200	0.2		1209	0.5
	1511	1.2		1521	1.0		1558	1.1		1558	1.0		1619	1.0		1636	0.9
	2217	0.4		2251	0.4		2302	0.3		2323	0.3						
11	0313	1.1	26	0308	1.1	11	0400	1.1	26	0411	1.1	11	0000	0.3	26	0024	0.3
	1043	0.0		1117	0.1		1145	0.1		1209	0.3		0438	1.0		0508	0.9
	1547	1.1		1551	1.0		1624	1.1		1630	1.0		1253	0.4		1254	0.6
	2254	0.4		2323	0.4		2343	0.4					1653	0.9		1700	0.9
12	0347	1.1	27	0353	1.1	12	0426	1.1	27	0002	0.4	12	0058	0.4	27	0121	0.4
	1123	0.1		1200	0.2		1226	0.2		0454	1.1		0509	0.9		0556	0.8
	1621	1.1		1619	1.0		1658	1.0		1251	0.4		0800	0.8		0913	0.7
	2330	0.4		2358	0.4					1704	0.9		0936	0.8		1049	0.7
													1351	0.5		1351	0.6
													1715	0.8		1713	0.8
													2024	0.6			
								2209	0.6								
13	0415	1.0	28	0432	1.1	13	0026	0.4	28	0054	0.4	13	0204	0.4	28	0226	0.4
	1206	0.1		1249	0.3		0500	1.0		0536	0.9		0600	0.8		0706	0.7
	1658	1.0		1700	0.9		1313	0.3		1336	0.5		0758	0.7		0841	0.7
							1726	0.9		1743	0.8		1100	0.9		1130	0.8
													1500	0.6		1458	0.6
								1756	0.7	1724	0.7						
								2039	0.6	2000	0.7						
								2321	0.7	2302	0.7						
14	0009	0.4	29	0039	0.5	14	0119	0.4	29	0154	0.4	14	0328	0.4	29	0338	0.4
	0449	1.0		0513	1.0		0538	0.9		0624	0.8		1158	1.0		1200	0.9

2017

UBATUBA - BASE NORTE DO IOUSP

2017

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					
DIA	HORA		ALT	DIA	HORA		ALT	DIA	HORA		ALT	DIA	HORA		ALT		
	H	M			H	M			H	M			H	M		H	M
01	0008	0.9	16	0051	0.9	01	0043	1.1	16	0013	1.0	01	0111	1.1	16	0036	1.0
	0547	0.2		0639	0.2		0653	0.1		0745	0.2		0709	0.1		0800	0.3
	1253	1.0		1338	1.0		1308	1.1		1236	1.0		1321	1.0		1249	1.0
	1832	0.4		1904	0.4		1909	0.2		1949	0.2		1926	0.1		2004	0.1
02	0034	1.0	17	0038	1.0	02	0111	1.1	17	0049	1.1	02	0151	1.1	17	0115	1.1
	0638	0.1		0723	0.1		0739	0.0		0823	0.2		0800	0.1		0839	0.3
	1309	1.1		1351	1.0		1326	1.1		1304	1.1		1330	1.0		1323	1.1
	1908	0.3		1941	0.3		1953	0.1		2026	0.1		2013	0.1		2047	0.1
03	0100	1.1	18	0039	1.1	03	0139	1.2	18	0124	1.2	03	0230	1.2	18	0156	1.1
	0723	0.0		0804	0.1		0823	0.0		0900	0.2		0851	0.1		0913	0.3
	1328	1.1		1323	1.0		1341	1.1		1341	1.1		1339	1.0		1402	1.1
	1945	0.2		2013	0.2		2034	0.1		2102	0.1		2100	0.0		2124	0.0
04	0126	1.1	19	0108	1.2	04	0206	1.2	19	0204	1.2	04	0241	1.1	19	0232	1.1
	0806	0.0		0849	0.1		0906	0.0		0938	0.3		0939	0.2		0951	0.3
	1345	1.2		1328	1.1		1402	1.1		1413	1.1		1404	1.0		1441	1.1
	2021	0.2		2051	0.2		2115	0.1		2143	0.1		2151	0.0		2202	0.0
05	0153	1.2	20	0143	1.2	05	0228	1.2	20	0245	1.2	05	0309	1.1	20	0309	1.1
	0851	-0.1		0924	0.1		0954	0.1		1009	0.3		1024	0.3		1024	0.4
	1408	1.2		1400	1.1		1424	1.1		1454	1.1		1436	1.0		1513	1.1
	2058	0.1		2124	0.1		2200	0.1		2221	0.1		2241	0.1		2247	0.1
06	0219	1.2	21	0217	1.2	06	0300	1.2	21	0321	1.1	06	0326	1.0	21	0349	1.1
	0932	0.0		1000	0.2		1041	0.2		1045	0.4		1111	0.4		1100	0.4
	1428	1.2		1434	1.1		1456	1.0		1524	1.0		1508	1.0		1549	1.0
	2138	0.1		2200	0.1		2251	0.1		2300	0.1		2334	0.1		2328	0.1
07	0245	1.2	22	0258	1.2	07	0328	1.1	22	0400	1.1	07	0404	0.9	22	0424	1.0
	1011	0.0		1036	0.3		1128	0.4		1117	0.5		0556	0.9		1138	0.5
	1456	1.1		1508	1.1		1521	1.0		1558	1.0		0724	0.9		1617	1.0
	2215	0.2		2239	0.2		2343	0.2		2347	0.2		1200	0.5		1551	1.0
08	0311	1.2	23	0336	1.1	08	0406	1.0	23	0439	1.0	08	0026	0.2	23	0009	0.2
	1056	0.2		1106	0.4		0623	0.9		1158	0.5		0445	0.9		0504	1.0
	1519	1.1		1543	1.0		0749	0.9		1619	0.9		0634	0.8		1217	0.5
	2258	0.2		2317	0.2		1217	0.5		1558	0.9		0851	0.9		1647	0.9
09	0345	1.1	24	0411	1.1	09	0041	0.3	24	0036	0.3	09	0123	0.2	24	0100	0.2
	1145	0.3		1143	0.5		0454	0.9		0519	0.9		0526	0.8		0547	0.9
	1551	1.0		1609	1.0		0649	0.8		1249	0.6		0708	0.7		1304	0.5
	2349	0.3					0915	0.9		1641	0.8		0958	0.9		1717	0.9
10	0415	1.0	25	0002	0.3	10	0147	0.3	25	0128	0.3	10	0223	0.3	25	0154	0.3
	1236	0.4		0454	1.0		0547	0.7		0613	0.8		0621	0.7		0638	0.9
	1613	0.9		1221	0.6		0704	0.7		1345	0.6		0758	0.7		1400	0.5
				1632	0.9		1023	0.9		1709	0.8		1054	0.8		1809	0.8
11	0049	0.3	26	0058	0.3	11	0256	0.3	26	0224	0.3	11	0332	0.4	26	0251	0.3
	0500	0.9		0534	0.9		1115	0.9		1013	0.9		1141	0.8		1011	0.9
	0711	0.8		1309	0.6		1539	0.6		1447	0.6		1551	0.6		1500	0.5
	0938	0.9		1647	0.8		1847	0.7		2154	0.8		2004	0.8		2224	0.8
12	1336	0.6															
	1651	0.8															
	2015	0.6															
	2200	0.6															
12	0156	0.4	27	0158	0.4	12	0406	0.3	27	0326	0.3	12	0441	0.4	27	0349	0.3
	0553	0.7		0636	0.8		1202	1.0		1102	0.9		1209	0.8		1113	0.9
	0728	0.7		0809	0.8		1654	0.6		1551	0.5		1658	0.5		1604	0.4
	1051	0.9		1039	0.8					2300	0.8		2154	0.8		2338	0.9
13	1449	0.6															
	1719	0.7															
	2026	0.6															
	2306	0.7															
13	0311	0.4	28	0300	0.4	13	0004	0.8	28	0426	0.3	13	0023	0.8	28	0451	0.3
	1145	1.0		1115	0.9		0513	0.3		1145	1.0		0543	0.4		1202	0.9
	1623	0.6		1528	0.6		1239	0.9		1653	0.4		1236	0.8		1708	0.3

2017

PORTO DE SANTOS - TORRE GRANDE

2017

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	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M
01	0436	1.4	16	0513	1.2	01	0526	1.3	16	0023	0.4	01	0417	1.4	16	0417	1.3
	1017	0.5		1108	0.4		1104	0.5		0517	1.1		1017	0.3		1104	0.2
	1602	1.1		1628	1.2		1658	1.1		1213	0.4		1630	1.3		1630	1.4
	2330	0.1								1723	1.2		2330	0.1		2343	0.4
02	0513	1.3	17	0013	0.3	02	0051	0.2	17	0108	0.5	02	0453	1.3	17	0441	1.2
	1049	0.5		0536	1.1		0606	1.2		0549	1.1		1049	0.4		1156	0.3
	1623	1.1		1153	0.5		1141	0.5		1311	0.5		1654	1.2		1704	1.3
				1704	1.2		1706	1.0		1806	1.1					2256	0.6
							1900	0.9									
							2054	1.0									
03	0021	0.1	18	0102	0.4	03	0145	0.3	18	0202	0.6	03	0019	0.3	18	0024	0.6
	0558	1.3		0602	1.1		0656	1.0		0615	1.0		0523	1.1		0504	1.1
	1123	0.6		1243	0.5		1228	0.6		1417	0.5		1121	0.5		1253	0.4
	1641	1.0		1749	1.1		1700	0.9		1902	1.0		1708	1.0		1747	1.2
	1953	0.9					1841	0.8		2258	0.8					2206	0.6
							2230	1.0									
04	0113	0.2	19	0153	0.5	04	0249	0.5	19	0000	0.8	04	0115	0.5	19	0000	0.7
	0651	1.2		0638	1.0		0756	0.9		0306	0.7		0558	1.0		0111	0.7
	1208	0.6		1349	0.5		1409	0.7		0702	0.8		1208	0.6		0526	1.0
	1626	0.9		1847	1.0		1702	0.7		0856	0.8		1711	0.9		1351	0.4
	1813	0.9					1851	0.7		1115	0.9		1911	0.9		1834	1.1
	2130	1.0					2347	1.1		1524	0.5		2232	1.0		2223	0.7
										2047	0.9						
										2256	0.9						
05	0209	0.3	20	0245	0.5	05	0402	0.5	20	0008	0.9	05	0223	0.6	20	0019	0.8
	0751	1.1		0728	0.9		0923	0.9		0458	0.7		0639	0.9		0228	0.7
	1315	0.7		1500	0.5		1900	0.6		1204	1.0		1041	0.7		0545	0.8
	1623	0.8		2011	1.0					1632	0.4		1158	0.7		0845	0.8
	1823	0.8											1400	0.6		1053	0.8
	2238	1.0											1711	0.7		1451	0.5
													1900	0.7		1945	0.9
													2353	1.1		2230	0.9
06	0309	0.3	21	0345	0.6	06	0051	1.2	21	0030	1.0	06	0358	0.7	21	0030	0.9
	0900	1.0		1136	0.9		0524	0.5		0706	0.6		0847	0.8		0721	0.7
	1508	0.7		1608	0.5		1309	0.9		1249	1.1		1006	0.7		1143	0.9
	1639	0.7		2232	1.0		1851	0.4		1730	0.3		1236	0.8		1553	0.4
	1847	0.7											1609	0.6			
	2341	1.1											1706	0.6			
													1900	0.6			
07	0417	0.4	22	0502	0.6	07	0145	1.3	22	0058	1.2	07	0051	1.2	22	0036	1.0
	1013	1.0		1224	1.0		0638	0.5		0743	0.5		0653	0.6		0715	0.6
	1856	0.5		1711	0.4		1345	1.0		1324	1.2		1300	0.9		1219	1.1
							1908	0.3		1821	0.2		1843	0.4		1653	0.3
08	0043	1.2	23	0002	1.1	08	0226	1.4	23	0130	1.3	08	0134	1.3	23	0051	1.1
	0526	0.4		0638	0.6		0726	0.4		0806	0.4		0719	0.5		0738	0.5
	1138	1.0		1304	1.2		1409	1.1		1358	1.3		1326	1.1		1258	1.2
	1851	0.4		1804	0.3		1934	0.2		1906	0.1		1845	0.3		1747	0.2
09	0143	1.3	24	0051	1.2	09	0304	1.5	24	0158	1.4	09	0208	1.4	24	0113	1.3
	0632	0.3		0734	0.5		0758	0.3		0832	0.4		0724	0.4		0758	0.4
	1321	1.1		1343	1.2		1424	1.2		1434	1.4		1341	1.2		1336	1.3
	1915	0.3		1847	0.2		2011	0.1		1945	0.0		1917	0.2		1838	0.1
10	0236	1.4	25	0132	1.3	10	0339	1.5	25	0228	1.5	10	0241	1.5	25	0139	1.4
	0724	0.3		0808	0.4		0826	0.3		0847	0.3		0736	0.3		0815	0.3
	1347	1.1		1415	1.3		1438	1.3		1504	1.4		1354	1.3		1408	1.4
	1943	0.2		1926	0.1		2051	0.0		2026	-0.1		1953	0.1		1924	0.0
11	0321	1.5	26	0208	1.4	11	0402	1.4	26	0254	1.5	11	0304	1.5	26	0204	1.5
	0809	0.3		0838	0.4		0902	0.3		0906	0.3		0804	0.3		0828	0.3
	1423	1.2		1449	1.3		1458	1.3		1534	1.4		1411	1.4		1443	1.5
	2023	0.1		2008	0.0		2130	0.0		2111	-0.1		2026	0.0		2009	-0.1
12	0400	1.5	27	0241	1.4	12	0413	1.4	27	0321	1.5	12	0319	1.4	27	0226	1.5
	0847	0.3		0858	0.4		0934	0.3		0924	0.3		0834	0.2		0839	0.2
	1443	1.2		1517	1.3		1517	1.4		1554	1.4		1434	1.4		1519	1.5
	2108	0.1		2047	-0.1		2211	0.1		2156	-0.1		2104	0.0		2053	-0.1
13	0438	1.4	28	0313	1.5	13	0419	1.3	28	0351	1.5	13	0328	1.4	28	0253	1.5
	0921	0.3		0921	0.4		1006	0.3		0951	0.3		0906	0.2		0904	0.2
	1506	1.2		1539	1.3		1549	1.4		1617	1.3		1500	1.5		1543	1.5
	2154	0.1		2132	-0.1		2256	0.1		2243	0.0		2145	0.1		2136	-0.1
14	0456	1.3	29	0345	1.5	14	0434	1.3				14	0341	1.4	29	0317	1.4

0958	0.4	0939	0.4	1047	0.3	0945	0.2	0930	0.2
1532	1.2	1556	1.3	1613	1.4	1526	1.5	1613	1.4
2241	0.1	2219	-0.1	2339	0.3	2223	0.2	2219	0.0
15 0506	1.3	30 0417	1.4	15 0456	1.2	15 0358	1.3	30 0349	1.3
1034	0.4	1006	0.4	1124	0.3	1021	0.2	1002	0.3
1600	1.3	1615	1.2	1649	1.3	1558	1.5	1628	1.3
2326	0.2	2306	0.0			2300	0.3	2304	0.2
		31 0453	1.4					31 0411	1.2
		1034	0.4					1039	0.3
		1634	1.2					1653	1.2
		2359	0.1					2355	0.4

31	0034	0.7
	0428	0.9
	0949	0.7
	1349	0.4
	2151	1.0

2017

PORTO DE SANTOS - TORRE GRANDE

2017

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	DIA	H M	M
01	0151	0.6	16	0021	0.6	01	0349	0.5	16	0324	0.7	01	0039	1.1	16	0115	1.0
	0653	0.9		0432	0.9		0938	0.9		0456	0.7		0523	0.3		0651	0.3
	1454	0.5		0645	0.8		1617	0.7		0702	0.6		1254	1.1		1351	1.4
	2009	0.9		1004	1.0					1221	1.2		1941	0.5		1936	0.4
				1438	0.3					1643	0.6						
				2002	1.1												
02	0313	0.6	17	0145	0.7	02	0019	1.0	17	0102	0.9	02	0109	1.2	17	0139	1.2
	0917	0.9		0443	0.8		0500	0.4		0706	0.5		0613	0.2		0709	0.2
	1549	0.5		0649	0.7		1208	1.0		1315	1.3		1315	1.2		1423	1.5
	2353	0.9		1109	1.1		1808	0.6		1836	0.5		2002	0.5		1939	0.4
				1539	0.4												
				2113	1.0												
03	0436	0.5	18	0658	0.6	03	0058	1.1	18	0139	1.0	03	0147	1.3	18	0153	1.3
	1049	1.0		1213	1.2		0554	0.3		0708	0.3		0654	0.1		0734	0.0
	1651	0.6		1649	0.4		1243	1.1		1404	1.4		1343	1.3		1453	1.5
				2254	1.0		1930	0.5		1936	0.4		2024	0.4		2000	0.3
04	0038	1.1	19	0658	0.5	04	0134	1.2	19	0202	1.1	04	0215	1.4	19	0206	1.4
	0534	0.4		1315	1.3		0639	0.2		0721	0.2		0730	0.0		0808	0.0
	1145	1.1		1809	0.4		1319	1.2		1449	1.5		1409	1.4		1513	1.4
	1804	0.5					2006	0.5		2009	0.4		2045	0.3		2023	0.2
05	0111	1.2	20	0128	1.0	05	0204	1.3	20	0226	1.2	05	0247	1.5	20	0221	1.4
	0617	0.2		0704	0.3		0717	0.1		0753	0.0		0809	-0.1		0843	0.0
	1230	1.2		1409	1.4		1354	1.3		1524	1.5		1434	1.5		1526	1.4
	1915	0.5		1921	0.4		2036	0.4		2028	0.3		2100	0.3		2056	0.2
06	0147	1.3	21	0202	1.1	06	0238	1.4	21	0236	1.3	06	0313	1.5	21	0245	1.5
	0700	0.1		0726	0.2		0753	0.0		0828	0.0		0847	-0.1		0917	0.1
	1315	1.3		1502	1.5		1426	1.4		1554	1.5		1502	1.5		1534	1.3
	2004	0.4		2011	0.3		2100	0.4		2054	0.3		2119	0.3		2128	0.1
07	0217	1.3	22	0228	1.2	07	0304	1.4	22	0249	1.4	07	0336	1.5	22	0308	1.5
	0738	0.0		0804	0.1		0830	-0.1		0906	0.0		0928	-0.1		0958	0.2
	1356	1.3		1549	1.5		1458	1.5		1615	1.4		1528	1.5		1549	1.3
	2041	0.4		2043	0.3		2123	0.3		2123	0.2		2138	0.2		2204	0.2
08	0249	1.3	23	0243	1.2	08	0330	1.4	23	0306	1.4	08	0353	1.4	23	0339	1.5
	0815	0.0		0845	0.0		0909	-0.1		0949	0.0		1013	0.0		1038	0.3
	1436	1.4		1626	1.5		1528	1.5		1623	1.3		1600	1.4		1604	1.3
	2109	0.4		2117	0.3		2139	0.3		2156	0.2		2202	0.3		2247	0.2
09	0311	1.3	24	0302	1.3	09	0345	1.4	24	0328	1.4	09	0409	1.3	24	0408	1.5
	0853	0.0		0928	0.0		0953	-0.1		1028	0.1		1100	0.1		1115	0.4
	1509	1.4		1658	1.4		1600	1.5		1628	1.3		1628	1.4		1624	1.2
	2138	0.4		2151	0.3		2158	0.3		2226	0.3		2230	0.3		2332	0.3
10	0332	1.3	25	0319	1.3	10	0400	1.3	25	0356	1.4	10	0426	1.2	25	0447	1.4
	0934	0.0		1013	0.0		1039	0.0		1111	0.2		1151	0.2		0924	0.6
	1547	1.5		1717	1.3		1630	1.4		1645	1.2		1702	1.2		1043	0.6
	2156	0.4		2219	0.4		2221	0.3		2302	0.3		2300	0.4		1158	0.6
																1651	1.1
11	0343	1.3	26	0347	1.3	11	0413	1.3	26	0424	1.4	11	0447	1.1	26	0026	0.4
	1021	0.0		1102	0.1		1128	0.1		1158	0.4		1249	0.4		0521	1.2
	1621	1.5		1721	1.2		1704	1.4		1702	1.2		1738	1.1		0932	0.6
	2217	0.4		2254	0.4		2249	0.4		2347	0.4		2338	0.5		1147	0.7
																1258	0.7
																1708	1.0
12	0358	1.2	27	0408	1.3	12	0432	1.2	27	0500	1.3	12	0456	0.9	27	0126	0.4
	1109	0.1		1153	0.2		1219	0.2		1251	0.5		0724	0.9		0606	1.1
	1658	1.4		1728	1.2		1743	1.3		1726	1.1		0954	0.9		0956	0.7
	2238	0.4		2324	0.4		2315	0.4					1353	0.6		1209	0.8
													1809	0.9		1404	0.8
																1726	0.9
																2102	0.8
																2228	0.8
13	0411	1.1	28	0443	1.2	13	0447	1.1	28	0041	0.4	13	0054	0.6	28	0232	0.5
	1200	0.1		1241	0.3		1313	0.3		0539	1.2		0456	0.8		0708	0.9
	1736	1.4		1749	1.1		1821	1.1		0954	0.7		0702	0.8		1004	0.8
	2304	0.5					2349	0.5		1123	0.7		1117	1.1		1232	0.9
										1345	0.6		1509	0.7		1556	0.8
										1753	1.0		1909	0.8		1702	0.8
													2217	0.7		1954	0.7
																2324	0.9
14	0426	1.1	29	0004	0.5	14	0451	0.9	29	0151	0.5	14	0009	0.7	29	0339	0.4

2017

CANANEIA - BASE SUL DO IOUSP

2017

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		HORA	ALT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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01 0504	1.5	16	0609	1.4	01 0606	1.5	16	0704	1.2	01 0502	1.5	16	0553	1.3	0945	0.4		1024	0.3	1034	0.3		1126	0.3	0941	0.3		1032	0.2	1758	1.2		1754	1.2	1904	1.2		1824	1.1	1758	1.4		1728	1.3	2328	0.1		2247	0.3				2315	0.4	2317	0.2		2217	0.3	02 0547	1.5	17	0656	1.3	02 0039	0.3	17	0323	0.9	02 0549	1.4	17	0636	1.1	1013	0.4		1104	0.4	0656	1.3		0447	0.8	1008	0.3		1106	0.2	1847	1.1		1654	1.1	1106	0.4		0758	1.0	1843	1.2		1804	1.3				1824	1.1	1508	1.0		1208	0.4	2341	0.4		2247	0.4				2317	0.4	1700	0.9		1917	1.1											2002	1.1		2351	0.5						03 0023	0.2	18	0743	1.1	03 0223	0.5	18	0323	0.9	03 0636	1.2	18	0254	0.9	0630	1.4		1149	0.4	0751	1.2		0556	0.8	1045	0.3		0453	0.9	1053	0.4		1611	1.0	1147	0.5		0900	1.0	1458	0.9		0723	1.0	1456	1.0		1758	1.0	1521	0.9		1304	0.5	1615	0.9		1151	0.4	1643	0.9		1906	1.0	1756	0.8		2030	1.0	1938	1.1		1851	1.2	1943	1.1		2358	0.5	2111	1.1								2309	0.5	04 0132	0.3	19	0838	1.1	04 0443	0.5	19	0024	0.7	04 0000	0.6	19	0258	1.0	0717	1.4		1238	0.5	0851	1.1		0334	0.9	0726	1.1		0554	0.8	1126	0.5		1704	0.9	1224	0.6		0643	0.7	1117	0.4		0832	0.9	1506	0.9		1758	0.9	1545	0.9		1013	1.0	1506	0.9		1243	0.5	1728	0.8		2019	1.0	1839	0.7		1504	0.6	1728	0.8		1949	1.1	2047	1.0				2238	1.1		2151	1.0	2049	1.1		2347	0.6	05 0306	0.4	20	0045	0.6	05 0600	0.5	20	0117	0.8	05 0017	0.8	20	0306	1.0	0811	1.3		0358	0.8	1000	1.0		0338	0.9	0202	0.8		0634	0.7	1208	0.6		0554	0.7	1319	0.7		0713	0.6	0513	0.6		0951	0.9	1523	0.9		0943	1.0	1600	0.8		1128	1.0	0834	0.9		1430	0.6	1806	0.7		1349	0.6	1911	0.5		1738	0.5	1200	0.5		2058	1.1	2154	1.1		2138	1.0	2358	1.2		2304	1.1	1523	0.9														1817	0.7														2213	1.0				06 0436	0.4	21	0147	0.7	06 0702	0.4	21	0749	0.5	06 0100	1.0	21	0021	0.8	0913	1.2		0358	0.8	1117	1.0		1230	1.1	0156	1.0		0313	1.0	1300	0.7		0643	0.7	1545	0.8		1824	0.3	0619	0.5		0702	0.6	1549	0.9		1054	1.1	1951	0.4				0951	0.9		1102	1.0	1849	0.6		1611	0.6						1258	0.6		1704	0.5	2300	1.1		2249	1.1						1543	0.8		2211	1.1											1900	0.5				07 0549	0.3	22	0717	0.6	07 0100	1.3	22	0006	1.2	07 0004	1.1	22	0126	0.9	1023	1.2		1158	1.1	0756	0.4		0813	0.5	0709	0.5		0308	1.0	1406	0.7		1749	0.4	1234	1.1		1319	1.3	1109	1.0		0728	0.5	1600	0.8		2347	1.2	2021	0.3		1904	0.2	1938	0.4		1204	1.1	1919	0.5													1800	0.3															2330	1.2	08 0000	1.2	23	0753	0.5	08 0149	1.4	23	0100	1.3	08 0100	1.3	23	0754	0.4	0653	0.3		1254	1.2	0836	0.4		0839	0.4	0751	0.4		1254	1.2	1138	1.2		1836	0.3	1332	1.2		1402	1.4	1223	1.1		1845	0.2	1956	0.4				2053	0.2		1945	0.0	2006	0.3				09 0058	1.3	24	0038	1.3	09 0230	1.5	24	0145	1.5	09 0139	1.4	24	0028	1.3	0751	0.3		0821	0.5	0856	0.4		0856	0.4	0811	0.4		0811	0.4	1245	1.2		1341	1.3	1421	1.3		1445	1.4	1317	1.2		1336	1.4	2032	0.3		1913	0.1	2115	0.2		2021	-0.1	2034	0.2		1924	0.0	10 0151	1.4	25	0121	1.4	10 0308	1.5	25	0223	1.5	10 0211	1.5	25	0115	1.5	0843	0.3		0845	0.5	0841	0.4		0853	0.4	0808	0.4		0832	0.3	1345	1.3		1421	1.4	1504	1.4		1523	1.5	1402	1.3		1415	1.5	2102	0.3		1954	0.0	2119	0.2		2100	-0.1	2049	0.2		2004	-0.1	11 0239	1.5	26	0204	1.4	11 0351	1.6	26	0302	1.6	11 0251	1.5	26	0158	1.6	0924	0.4		0849	0.5	0845	0.4		0841	0.4	0802	0.3		0838	0.3	1436	1.3		1502	1.4	1547	1.4		1602	1.5	1445	1.4		1458	1.5	2130	0.3		2032	0.0	2115	0.2		2138	-0.1	2049	0.2		2045	-0.1	12 0323	1.5	27	0247	1.5	12 0426	1.5	27	0345	1.6	12 0324	1.6	27	0239	1.6	0926	0.5		0834	0.5	0906	0.3		0853	0.3	0819	0.2		0824	0.3	1519	1.3		1545	1.4	1619	1.4		1641	1.5	1519	1.4		1538	1.5	2123	0.2		2109	-0.1	2130	0.2		2211	-0.1	2054	0.2		2121	-0.1	13 0406	1.5	28	0326	1.6	13 0504	1.5	28	0423	1.6	13 0402	1.5	28	0319	1.6	0902	0.5		0845	0.4	0939	0.2		0911	0.3	0851	0.1		0828	0.3	1602	1.3		1621	1.4	1653	1.4		1717	1.4	1556	1.5		1615	1.5	2117	0.2		2151	-0.1	2156	0.2		2247	0.0	2109	0.2		2156	0.0	14 0453	1.5	29	0404	1.6	14 0545	1.4				14 0439	1.5	29	0400	1.6

0919	0.4	0906	0.4	1009	0.2	0919	0.1	0851	0.2
1645	1.3	1700	1.4	1721	1.3	1626	1.4	1658	1.5
2143	0.2	2228	0.0	2219	0.3	2130	0.2	2223	0.1
15 0532	1.4	30 0447	1.6	15 0623	1.3	15 0513	1.4	30 0445	1.5
0953	0.4	0932	0.3	1051	0.2	0956	0.1	0913	0.2
1717	1.2	1739	1.3	1749	1.2	1658	1.4	1741	1.4
2211	0.2	2309	0.0	2251	0.3	2156	0.2	2241	0.3
		31 0524	1.5					31 0526	1.3
		1002	0.3					0949	0.2
		1817	1.2					1824	1.3
		2353	0.2					2256	0.5

2017

CANANEIA - BASE SUL DO IOUSP

2017

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			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0613	1.1	16	0228	1.0	01	0149	1.0	16	0224	1.0	01	0300	1.1	16	0300	1.0
	1019	0.3		0454	0.9		0436	0.8		0532	0.9		0619	0.7		0600	0.8
	1915	1.2		0651	1.0		0700	0.9		0730	0.9		0904	0.9		0911	1.0
	2309	0.7		1136	0.3		1053	0.4		1238	0.4		1300	0.6		1453	0.3
				1832	1.3		1413	0.7		1858	1.3		1523	0.6		2008	1.3
				2251	0.5		1558	0.7		2302	0.5		1656	0.6			
							1958	1.2					2124	1.1			
							2313	0.8									
02	0200	0.9	17	0238	1.0	02	0211	1.1	17	0243	1.0	02	0051	0.8	17	0008	0.6
	0417	0.7		0549	0.8		0545	0.7		0600	0.7		0336	1.0		0308	0.9
	0709	1.0		0800	0.9		0809	0.8		0853	0.9		0654	0.7		0615	0.7
	1100	0.4		1234	0.4		1147	0.5		1411	0.4		1009	1.0		1008	1.1
	1445	0.8		1917	1.2		1449	0.7		1949	1.3		1426	0.6		1600	0.3
	1651	0.8		2315	0.6		1658	0.6		2343	0.7		1604	0.6		2106	1.3
	2019	1.1					2102	1.1					1754	0.6			
	2336	0.8					2358	0.9					2247	1.1			
03	0209	1.0	18	0253	1.0	03	0247	1.1	18	0256	1.0	03	0700	0.6	18	0104	0.7
	0539	0.7		0617	0.7		0626	0.6		0619	0.7		1104	1.1		0317	0.8
	0821	0.9		0919	0.9		0936	0.9		0958	1.0		1656	0.6		0641	0.6
	1149	0.5		1430	0.5		1302	0.6		1534	0.3		1845	0.6		1058	1.2
	1502	0.8		2015	1.2		1502	0.7		2045	1.3		2358	1.2		1708	0.3
	1749	0.6		2356	0.7		1756	0.5								2213	1.3
	2147	1.0					2224	1.1									
04	0002	1.0	19	0300	1.0	04	0104	1.0	19	0026	0.8	04	0615	0.5	19	0702	0.5
	0228	1.1		0645	0.6		0254	1.0		0302	0.9		1151	1.2		1145	1.3
	0630	0.6		1034	1.0		0700	0.6		0641	0.6		1919	0.6		1815	0.3
	0947	0.9		1619	0.4		1047	1.0		1053	1.1					2328	1.3
	1253	0.7		2123	1.2		1841	0.5		1641	0.3						
	1515	0.8					2351	1.2		2151	1.3						
	1834	0.5															
	2334	1.1															
05	0706	0.5	20	0053	0.9	05	0715	0.6	20	0251	0.9	05	0051	1.3	20	0730	0.4
	1102	1.0		0302	1.0		1141	1.1		0658	0.5		0609	0.4		1232	1.3
	1911	0.4		0702	0.5		1915	0.5		1136	1.2		1230	1.2		1923	0.3
				1130	1.1					1739	0.2		1924	0.5			
				1721	0.3					2300	1.3						
				2241	1.2												
06	0038	1.2	21	0723	0.4	06	0041	1.3	21	0717	0.4	06	0134	1.4	21	0038	1.3
	0736	0.5		1215	1.2		0654	0.5		1217	1.3		0641	0.2		0758	0.3
	1206	1.1		1813	0.2		1223	1.2		1836	0.1		1308	1.3		1324	1.4
	1947	0.3		2349	1.3		1938	0.4					1921	0.5		2026	0.3
07	0113	1.4	22	0747	0.4	07	0121	1.4	22	0004	1.4	07	0209	1.4	22	0132	1.4
	0736	0.5		1300	1.3		0639	0.3		0743	0.3		0713	0.1		0826	0.3
	1256	1.2		1900	0.1		1304	1.3		1302	1.4		1353	1.4		1423	1.5
	2006	0.3					1932	0.4		1930	0.1		1941	0.5		2123	0.3
08	0153	1.5	23	0045	1.5	08	0158	1.5	23	0102	1.5	08	0249	1.5	23	0221	1.4
	0717	0.4		0802	0.3		0702	0.2		0800	0.3		0753	0.0		0834	0.3
	1339	1.3		1341	1.4		1345	1.4		1353	1.5		1436	1.4		1519	1.5
	2015	0.3		1947	0.0		1938	0.4		2023	0.1		2008	0.4		2211	0.4
09	0224	1.5	24	0130	1.6	09	0236	1.5	24	0153	1.5	09	0321	1.4	24	0306	1.4
	0728	0.2		0815	0.3		0734	0.1		0806	0.3		0826	0.0		0823	0.3
	1415	1.4		1423	1.5		1421	1.4		1443	1.5		1517	1.4		1609	1.5
	2015	0.3		2030	0.0		1958	0.3		2113	0.2		2032	0.4		2228	0.5
10	0300	1.5	25	0211	1.6	10	0308	1.5	25	0238	1.5	10	0356	1.4	25	0353	1.3
	0756	0.1		0808	0.3		0806	0.0		0753	0.3		0906	0.0		0847	0.2
	1454	1.4		1508	1.5		1500	1.4		1536	1.5		1600	1.5		1658	1.5
	2024	0.2		2111	0.0		2021	0.3		2153	0.3		2058	0.4		2138	0.6
11	0336	1.5	26	0258	1.6	11	0345	1.4	26	0321	1.4	11	0430	1.3	26	0436	1.2
	0826	0.0		0804	0.3		0845	0.0		0809	0.2		0947	0.0		0917	0.3
	1528	1.5		1554	1.5		1541	1.5		1624	1.5		1639	1.5		1743	1.5
	2047	0.2		2145	0.2		2047	0.3		2208	0.5		2123	0.4		2156	0.5
12	0408	1.5	27	0341	1.5	12	0415	1.4	27	0404	1.3	12	0504	1.2	27	0515	1.1
	0902	0.0		0823	0.2		0919	0.0		0841	0.2		1032	0.1		1000	0.3
	1602	1.5		1641	1.5		1617	1.5		1711	1.5		1715	1.5		1823	1.4
	2106	0.2		2206	0.3		2109	0.3		2153	0.6		2153	0.4		2221	0.5
13	0447	1.4	28	0423	1.4	13	0451	1.2	28	0454	1.2	13	0549	1.1	28	0204	1.0
	0939	0.1		0854	0.2		0958	0.1		0915	0.3		1123	0.2		0356	1.0
	1638	1.4		1724	1.5		1656	1.4		1800	1.4		1756	1.5		0602	1.0

	2130	0.3		2209	0.5		2138	0.4		2204	0.6		2219	0.4		1045	0.4
																1904	1.3
																2258	0.5
14	0519	1.2	29	0506	1.2	14	0526	1.1	29	0111	0.9	14	0234	1.0	29	0241	1.1
	1011	0.1		0926	0.2		1041	0.2		0243	0.8		0458	0.9		0517	0.9
	1709	1.4		1809	1.4		1736	1.4		0543	1.1		0653	1.0		0702	1.0
	2156	0.3		2221	0.6		2202	0.4		1000	0.3		1226	0.2		1132	0.4
										1847	1.4		1836	1.4		1953	1.2
										2234	0.6		2254	0.5		2339	0.5
15	0558	1.1	30	0251	0.8	15	0219	1.0	30	0149	1.0	15	0247	1.0	30	0313	1.1
	1053	0.2		0558	1.0		0432	1.0		0419	0.8		0539	0.8		0609	0.9
	1751	1.3		1004	0.3		0611	1.0		0641	0.9		0806	0.9		0811	0.9
	2217	0.4		1447	0.7		1128	0.3		1051	0.4		1339	0.3		1224	0.5
				1900	1.3		1811	1.4		1402	0.6		1917	1.4		2043	1.1
				2249	0.7		2232	0.5		1456	0.6		2326	0.5			
										1932	1.2						
										2304	0.7						
									31	0221	1.1						
										0536	0.8						
										0753	0.9						
										1149	0.5						
										1449	0.6						
										1556	0.6						
										2021	1.1						
										2353	0.7						

2017

CANANEIA - BASE SUL DO IOUSP

2017

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					
DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA	
	H	M		H	M		H	M		H	M		H	M		H	M
01	0024	0.6	16	0315	0.9	01	0306	0.6	16	0049	0.6	01	0023	1.1	16	0000	1.0
	0356	1.0		0600	0.8		1028	1.0		0332	0.8		0613	0.3		0738	0.2
	0645	0.8		0926	1.0		1419	0.7		0649	0.5		1145	1.2		1308	1.3
	0923	0.9		1534	0.4		1634	0.8		1109	1.1		2015	0.5		2006	0.4
	1324	0.6		2036	1.3		1926	0.7		1832	0.5						
	2149	1.1					2345	1.1		2239	1.0						
02	0143	0.7	17	0030	0.6	02	0549	0.4	17	0200	0.8	02	0109	1.3	17	0100	1.2
	0428	0.8		0330	0.9		1121	1.1		0317	0.8		0649	0.1		0804	0.2
	0649	0.7		0624	0.6		2002	0.6		0715	0.4		1234	1.3		1351	1.4
	1021	1.0		1024	1.1					1215	1.2		2041	0.5		2028	0.4
	1432	0.6		1656	0.4					1936	0.4						
	1706	0.7		2141	1.2												
	1838	0.7															
	2304	1.1															
03	0534	0.6	18	0124	0.7	03	0047	1.2	18	0006	1.1	03	0153	1.4	18	0145	1.3
	1109	1.1		0341	0.8		0623	0.3		0753	0.2		0721	0.0		0828	0.1
	1549	0.7		0656	0.5		1209	1.2		1313	1.4		1319	1.4		1430	1.5
	1723	0.7		1119	1.2		2036	0.6		2024	0.4		2058	0.4		2019	0.4
	1928	0.7		1815	0.4												
				2258	1.1												
04	0015	1.2	19	0724	0.4	04	0132	1.3	19	0109	1.2	04	0226	1.5	19	0221	1.4
	0553	0.4		1215	1.3		0658	0.1		0821	0.2		0756	-0.1		0834	0.2
	1156	1.2		1930	0.4		1258	1.3		1406	1.4		1404	1.5		1508	1.5
	2004	0.6					2058	0.5		2102	0.4		2102	0.4		2015	0.3
05	0106	1.3	20	0015	1.2	05	0209	1.4	20	0200	1.3	05	0302	1.5	20	0258	1.5
	0626	0.2		0758	0.3		0732	0.0		0851	0.1		0830	-0.1		0830	0.2
	1239	1.3		1313	1.4		1347	1.4		1453	1.5		1449	1.6		1551	1.5
	2032	0.6		2032	0.4		2115	0.5		2123	0.4		2049	0.4		2038	0.2
06	0151	1.4	21	0117	1.3	06	0249	1.5	21	0243	1.4	06	0339	1.5	21	0330	1.5
	0704	0.1		0832	0.2		0808	-0.1		0908	0.1		0906	-0.1		0845	0.2
	1321	1.3		1413	1.4		1432	1.4		1536	1.5		1526	1.6		1628	1.5
	2045	0.5		2123	0.4		2111	0.5		2058	0.4		2054	0.3		2106	0.1
07	0228	1.4	22	0208	1.3	07	0323	1.5	22	0317	1.4	07	0411	1.5	22	0400	1.4
	0741	0.0		0902	0.2		0845	-0.1		0900	0.2		0943	-0.1		0904	0.2
	1408	1.4		1506	1.5		1513	1.5		1615	1.5		1606	1.6		1706	1.4
	2039	0.5		2200	0.4		2058	0.4		2102	0.4		2109	0.3		2143	0.1
08	0302	1.4	23	0256	1.4	08	0358	1.4	23	0354	1.4	08	0449	1.4	23	0432	1.4
	0815	0.0		0923	0.2		0921	-0.1		0908	0.2		1017	0.0		0928	0.3
	1456	1.4		1556	1.5		1556	1.6		1656	1.5		1649	1.6		1747	1.3
	2039	0.5		2147	0.5		2108	0.4		2124	0.3		2134	0.2		2213	0.1
09	0341	1.4	24	0338	1.4	09	0434	1.4	24	0426	1.4	09	0523	1.3	24	0500	1.3
	0856	0.0		0909	0.2		1002	-0.1		0928	0.2		1054	0.2		0956	0.3
	1539	1.5		1641	1.5		1636	1.6		1736	1.4		1728	1.5		1824	1.2
	2054	0.5		2121	0.5		2130	0.3		2158	0.2		2200	0.2		2253	0.2
10	0413	1.3	25	0413	1.3	10	0506	1.3	25	0454	1.3	10	0606	1.2	25	0539	1.2
	0936	0.0		0921	0.2		1045	0.0		0958	0.3		1123	0.3		1023	0.4
	1617	1.5		1719	1.5		1709	1.6		1811	1.3		1809	1.3		1434	0.9
	2115	0.4		2143	0.4		2156	0.3		2230	0.2		2230	0.3		1611	0.9
																1906	1.1
																2328	0.3
11	0451	1.3	26	0454	1.3	11	0547	1.2	26	0521	1.2	11	0702	1.1	26	0628	1.1
	1019	0.0		0953	0.3		1128	0.1		1024	0.3		1154	0.5		1056	0.5
	1658	1.5		1800	1.5		1753	1.5		1854	1.2		1858	1.2		1451	1.0
	2143	0.4		2209	0.3		2221	0.3		2306	0.2		2302	0.3		1724	0.8
																2000	1.0
12	0528	1.2	27	0526	1.2	12	0634	1.1	27	0543	1.1	12	0258	0.9	27	0009	0.5
	1108	0.1		1021	0.3		1217	0.3		1058	0.4		0504	0.8		0736	1.1
	1736	1.5		1841	1.4		1832	1.4		1506	0.9		0815	1.0		1128	0.6
	2209	0.4		2249	0.3		2254	0.3		1604	0.9		1213	0.7		1502	1.0
										1938	1.1		1353	0.7		1817	0.7
										2349	0.4		1615	0.7		2111	0.9
													1954	1.0			
													2339	0.5			
13	0613	1.1	28	0308	1.1	13	0309	1.0	28	0656	1.0	13	0302	0.9	28	0132	0.6
	1202	0.2		0458	1.1		0458	1.0		1132	0.5		0556	0.7		0851	1.0
	1811	1.5		0556	1.1		0738	1.1		1515	0.9		0943	1.0		1209	0.8
	2241	0.4		1100	0.4		1323	0.4		1734	0.8		1341	0.9		1515	1.0
				1917	1.2		1915	1.3		2030	1.0		1743	0.6		1858	0.6

2017

CANANEIA - BASE SUL DO IOUSP

2017

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					
DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA	
	H	M		H	M		H	M		H	M		H	M		H	M
01	0045	1.2	16	0039	1.2	01	0126	1.4	16	0130	1.4	01	0134	1.5	16	0141	1.4
	0626	0.1		0745	0.2		0717	0.0		0724	0.4		0749	0.1		0723	0.5
	1202	1.3		1323	1.4		1300	1.5		1415	1.4		1321	1.5		1438	1.4
	2008	0.4		1934	0.5		2008	0.4		1917	0.2		2015	0.3		1941	0.1
02	0123	1.4	17	0119	1.3	02	0204	1.5	17	0204	1.4	02	0217	1.5	17	0217	1.4
	0702	0.0		0800	0.2		0758	0.0		0732	0.4		0836	0.2		0745	0.4
	1251	1.4		1402	1.5		1349	1.5		1458	1.4		1409	1.5		1513	1.4
	2026	0.4		1923	0.4		2013	0.3		1956	0.1		2028	0.3		2019	0.0
03	0200	1.5	18	0158	1.4	03	0245	1.6	18	0243	1.5	03	0304	1.5	18	0258	1.5
	0738	-0.1		0758	0.3		0836	0.0		0756	0.3		0919	0.3		0809	0.4
	1334	1.5		1445	1.5		1434	1.5		1538	1.4		1500	1.4		1554	1.4
	2036	0.4		1943	0.2		2013	0.3		2032	0.0		2030	0.3		2100	0.0
04	0238	1.5	19	0232	1.5	04	0323	1.6	19	0315	1.5	04	0354	1.6	19	0336	1.5
	0811	-0.1		0800	0.3		0911	0.1		0819	0.3		0943	0.4		0838	0.4
	1415	1.6		1521	1.5		1517	1.5		1613	1.4		1551	1.4		1632	1.3
	2028	0.3		2013	0.1		2026	0.3		2109	0.0		2051	0.3		2141	0.0
05	0309	1.6	20	0304	1.5	05	0406	1.5	20	0354	1.5	05	0443	1.5	20	0411	1.5
	0849	-0.1		0815	0.2		0938	0.3		0849	0.3		0938	0.5		0904	0.4
	1500	1.6		1600	1.5		1604	1.4		1654	1.3		1638	1.3		1708	1.2
	2030	0.3		2051	0.1		2053	0.2		2151	0.1		2119	0.3		2217	0.1
06	0349	1.6	21	0339	1.5	06	0454	1.5	21	0430	1.4	06	0528	1.5	21	0453	1.5
	0923	0.0		0841	0.3		0954	0.4		0913	0.4		0953	0.6		0936	0.4
	1543	1.6		1641	1.4		1653	1.3		1732	1.2		1723	1.2		1751	1.2
	2049	0.2		2123	0.0		2121	0.2		2226	0.1		2158	0.3		2302	0.1
07	0424	1.5	22	0409	1.4	07	0543	1.4	22	0508	1.4	07	0615	1.4	22	0532	1.4
	0954	0.1		0904	0.3		1006	0.5		0947	0.4		1011	0.6		1004	0.4
	1624	1.5		1717	1.3		1741	1.2		1411	1.0		1319	0.9		1551	1.0
	2109	0.2		2200	0.1		2158	0.3		1524	1.0		1509	0.8		1834	1.1
										1809	1.1		1811	1.1		2349	0.2
										2308	0.2		2236	0.4			
08	0504	1.4	23	0447	1.4	08	0636	1.3	23	0553	1.3	08	0706	1.3	23	0609	1.4
	1019	0.3		0934	0.3		1028	0.7		1013	0.4		1053	0.6		1039	0.4
	1706	1.4		1758	1.2		1319	0.9		1419	1.0		1402	1.0		1454	1.0
	2139	0.2		2239	0.2		1530	0.8		1653	0.9		1639	0.9		1700	0.9
							1830	1.0		1902	1.0		1906	1.0		1923	1.0
							2236	0.4					2317	0.4			
09	0554	1.3	24	0524	1.3	09	0206	0.7	24	0002	0.3	09	0211	0.6	24	0047	0.3
	1039	0.4		1000	0.4		0321	0.7		0638	1.3		0351	0.6		0658	1.3
	1754	1.2		1411	1.0		0732	1.2		1053	0.5		0802	1.1		1113	0.5
	2208	0.3		1602	0.9		1100	0.7		1441	1.0		1130	0.7		1509	1.0
				1841	1.0		1356	1.0		1743	0.8		1451	1.0		1743	0.9
				2315	0.3		1654	0.8		2006	0.9		1747	0.8		2024	1.0
							1930	0.9					2009	0.9			
							2315	0.5									
10	0651	1.2	25	0608	1.2	10	0215	0.7	25	0119	0.4	10	0009	0.5	25	0208	0.3
	1058	0.6		1032	0.5		0438	0.6		0728	1.2		0249	0.7		0751	1.3
	1351	0.8		1424	1.0		0839	1.1		1128	0.6		0500	0.6		1158	0.6
	1509	0.7		1711	0.9		1143	0.8		1500	1.0		0902	1.1		1526	0.9
	1845	1.1		1938	0.9		1424	1.0		1808	0.8		1221	0.7		1802	0.8
	2247	0.3					1754	0.7		2117	0.9		1528	1.0		2128	1.0
							2045	0.9					1834	0.8			
													2124	0.9			
11	0230	0.8	26	0004	0.4	11	0011	0.6	26	0308	0.4	11	0119	0.6	26	0338	0.4
	0415	0.8		0702	1.2		0236	0.7		0824	1.2		0304	0.7		0849	1.3
	0756	1.1		1102	0.6		0534	0.5		1213	0.7		0600	0.6		1251	0.6
	1117	0.8		1447	1.0		0954	1.1		1513	0.9		1009	1.1		1547	0.8
	1354	0.9		1802	0.8		1243	0.9		1834	0.7		1343	0.8		1823	0.7
	1651	0.7		2049	0.9		1456	1.0		2224	1.0		1609	0.9		2228	1.1
	1945	0.9					1841	0.7					1900	0.7			
	2319	0.5					2202	0.9					2238	1.0			
12	0241	0.8	27	0132	0.5	12	0619	0.4	27	0423	0.3	12	0651	0.5	27	0453	0.3
	0517	0.6		0802	1.1		1104	1.1		0928	1.2		1119	1.1		0951	1.2
	0909	1.1		1147	0.7		1908	0.6		1323	0.8		1613	0.7		1358	0.7
	1158	0.9		1500	1.0		2313	1.0		1521	0.8		1854	0.7		1553	0.8
	1408	1.0		1838	0.7					1853	0.6		2336	1.1		1851	0.6
	1756	0.6		2204	0.9					2319	1.1					2324	1.2
	2056	0.9															
13	0006	0.6	28	0409	0.4	13	0658	0.4	28	0521	0.2	13	0724	0.5	28	0556	0.3

0251	0.8	0909	1.1	1204	1.2	1032	1.3	1217	1.2	1056	1.3
0604	0.5	1239	0.8	1915	0.6	1908	0.5	1736	0.5	1915	0.5
1041	1.1	1509	1.0								
1302	1.0	1900	0.6								
1408	1.0	2315	1.0								
1847	0.6										
2221	0.9										
14 0647	0.4	29 0509	0.3	14 0008	1.2	29 0006	1.3	14 0019	1.2	29 0017	1.3
1154	1.2	1017	1.2	0728	0.4	0611	0.1	0743	0.5	0656	0.2
1919	0.5	1917	0.5	1254	1.3	1132	1.4	1308	1.3	1200	1.3
2345	1.0			1832	0.5	1930	0.4	1817	0.3	1951	0.4
15 0715	0.3	30 0006	1.2	15 0053	1.3	30 0051	1.4	15 0102	1.3	30 0108	1.4
1243	1.3	0556	0.2	0738	0.4	0700	0.1	0724	0.5	0753	0.2
1943	0.5	1117	1.3	1338	1.4	1228	1.4	1354	1.4	1300	1.3
		1939	0.5	1845	0.3	1953	0.4	1900	0.2	2024	0.3
		31 0049	1.3							31 0200	1.5
		0638	0.0							0847	0.3
		1211	1.4							1356	1.4
		1954	0.4							2100	0.3

FASES DA LUA PARA O ANO DE 2016

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	2	5	39
JAN	10	1	34	JAN	16	23	23	JAN	24	1	42	FEV	1	3	34
FEV	8	14	28	FEV	15	7	38	FEV	22	18	16	MAR	1	23	14
MAR	9	1	26	MAR	15	16	43	MAR	23	11	56	MAR	31	15	18
ABR	7	10	46	ABR	14	3	29	ABR	22	5	13	ABR	30	3	28
MAI	6	18	58	MAI	13	16	31	MAI	21	20	59	MAI	29	12	13
JUN	5	2	46	JUN	12	7	50	JUN	20	10	49	JUN	27	18	24
JUL	4	11	9	JUL	12	0	50	JUL	19	22	56	JUL	26	23	11
AGO	2	21	9	AGO	10	18	35	AGO	18	9	45	AGO	25	3	58
SET	1	9	36	SET	9	12	15	SET	16	19	39	SET	23	10	18
OUT	1	0	42	OUT	9	4	59	OUT	16	5	2	OUT	22	19	37
OUT	30	17	59	NOV	7	20	6	NOV	14	14	22	NOV	21	8	51
NOV	29	12	26	DEZ	7	9	2	DEZ	14	0	17	DEZ	21	2	4
DEZ	29	6	48												

TEMPO SEGUNDO O TMG

FASES DA LUA PARA O ANO DE 2017

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	5	19	35	JAN	12	11	25	JAN	19	22	11
JAN	27	23	52	FEV	4	4	3	FEV	11	0	15	FEV	18	19	25
FEV	26	14	34	MAR	5	11	18	MAR	12	14	40	MAR	20	15	51
MAR	28	2	26	ABR	3	18	25	ABR	11	6	5	ABR	19	9	58
ABR	26	11	47	MAI	3	2	30	MAI	10	21	44	MAI	19	0	44
MAI	25	19	27	JUN	1	12	22	JUN	9	13	5	JUN	17	11	48
JUN	24	2	30	JUL	1	0	32	JUL	9	3	57	JUL	16	19	41
JUL	23	10	0	JUL	30	15	11	AGO	7	18	6	AGO	15	1	31
AGO	21	18	57	AGO	29	8	13	SET	6	7	15	SET	13	6	45
SET	20	6	0	SET	28	3	6	OUT	5	19	12	OUT	12	12	53
OUT	19	19	43	OUT	27	22	43	NOV	4	6	3	NOV	10	21	7
NOV	18	12	6	NOV	26	17	21	DEZ	3	16	18	DEZ	10	8	12
DEZ	18	6	39	DEZ	26	9	24								

TEMPO SEGUNDO O TMG