

Tábuas das marés de Ubatuba, Santos e Cananéia para os anos de 2024 e 2025

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- **Abstract:** The tide tables of Ubatuba, Santos and Cananéia here presented give predictions of the levels and the times of high and low waters, in these stations, for the years of 2024 and 2025. 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 2024 e 2025. 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 2024 e 2025 (Harari, 2021). Na previsão são fornecidos os níveis máximos e mínimos de maré e seus respectivos instantes de ocorrência, nessas três estações maregráficas, localizadas na Base “Clarimundo de Jesus” (Base Norte do Instituto Oceanográfico da Universidade de São Paulo - IOUSP, em Ubatuba), no Porto de Santos (da Companhia Docas do Estado de São Paulo - CODESP, em Torre Grande) e na Base “Dr. João de Paiva Carvalho” (Base

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

As previsões apresentadas neste trabalho são baseadas na análise de maré das observações horárias da elevação da superfície nas estações maregráficas de Ubatuba, Santos e Cananéia. Esta análise foi efetuada através do Método Harmônico de Análise de Maré (Franco, 1988), sendo as constantes harmônicas de amplitude e fase das componentes de maré apresentadas em Mesquita & Harari (1983, 2003) e em Harari & Camargo (1995). Com os valores dessas constantes, são efetuadas previsões horárias de maré, através da composição harmônica das componentes estatisticamente selecionadas; além da seleção do método de análise, são consideradas apenas as componentes cuja amplitude é maior ou igual a 0,5 cm. Finalmente, previsões de preamares e 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 <https://www.marinha.mil.br/chm/dados-do-segnav-publicacoes/tabuas-das-mares>.

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

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

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

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

As Tábuas das Marés de Ubatuba, Santos e Cananéia

A posição geográfica da estação maregráfica da Base de Ubatuba é 23°30,0' S - 45°07,3' W e o nível médio considerado na análise é de 0,66 m, conforme apresentado na Carta Náutica nº 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 nº 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 nº 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 2024 e 2025, seguidas da Tabela das Fases da Lua desses anos. As tábuas de marés e as informações sobre as fases da lua podem ser encontradas na internet, através dos endereços:

<https://www.io.usp.br/index.php/extensao/servicos-a-comunidade.htm> e <http://www.labdados.io.usp.br/>.

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

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

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2024

UBATUBA - BASE NORTE DO IOUSP

2024

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	
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA	
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M
01	0021	0.2	16	0047	0.1	01	0106	0.4	16	0158	0.5	01	0021	0.4	16	0121	0.6		
	0519	0.9		0508	0.9		0541	0.9		0524	0.8		0453	0.9		0447	0.9		
	1215	0.5		1238	0.5		1311	0.4		0908	0.5		1239	0.4		0904	0.4		
	1713	1.0		1702	1.0		1747	0.9		1117	0.5		1709	1.0		1104	0.5		
										1345	0.5					1324	0.4		
										1800	0.8					1739	0.8		
										2056	0.7					2011	0.7		
										2341	0.8					2336	0.8		
02	0106	0.3	17	0139	0.2	02	0154	0.5	17	0300	0.6	02	0102	0.5	17	0226	0.8		
	0602	0.9		0543	0.8		0606	0.8		0600	0.8		0506	0.9		0506	0.8		
	1302	0.5		0823	0.7		1411	0.5		0945	0.5		1341	0.4		0934	0.5		
	1756	0.9		0953	0.7		1828	0.8		1206	0.6		1754	0.8		1151	0.5		
				1319	0.5					1508	0.5		2115	0.7		1456	0.4		
				1747	1.0					1904	0.7		2243	0.7		1856	0.6		
										2056	0.7					2009	0.6		
03	0158	0.4	18	0236	0.4	03	0253	0.5	18	0038	0.9	03	0202	0.6	18	0015	0.9		
	0651	0.8		0613	0.7		0643	0.8		0449	0.7		0523	0.8		1000	0.6		
	1358	0.5		0902	0.6		1038	0.7		0649	0.7		0906	0.6		1209	0.6		
	1847	0.8		1106	0.7		1517	0.4		1011	0.6		1028	0.6		1628	0.4		
				1417	0.5		1951	0.8		1241	0.6		1453	0.4					
				1839	0.9		2102	0.7		1654	0.4		1900	0.7					
				2123	0.8		2349	0.8					2021	0.7					
				2313	0.8								2349	0.9					
04	0253	0.4	19	0339	0.5	04	0358	0.6	19	0111	1.0	04	0326	0.7	19	0049	1.0		
	0817	0.8		0702	0.7		0851	0.7		0641	0.6		0547	0.7		0653	0.6		
	1458	0.5		0947	0.6		1147	0.8		0921	0.7		0845	0.6		1224	0.7		
	2009	0.8		1204	0.7		1632	0.4		1254	0.7		1139	0.7		1747	0.3		
				1538	0.5					1806	0.3		1606	0.3					
				2000	0.8														
				2123	0.7														
05	0349	0.4	20	0026	0.9	05	0043	0.9	20	0143	1.0	05	0028	1.0	20	0104	1.0		
	1102	0.8		0454	0.5		0521	0.6		0717	0.5		0826	0.6		0702	0.5		
	1600	0.4		0806	0.7		1230	0.8		1226	0.8		1219	0.8		1208	0.8		
	2228	0.8		1021	0.6		1743	0.3		1858	0.2		1724	0.2		1836	0.2		
				1251	0.7														
				1706	0.4														
06	0447	0.4	21	0117	0.9	06	0121	1.0	21	0200	1.1	06	0106	1.1	21	0123	1.0		
	1145	0.8		0611	0.5		0649	0.5		0753	0.5		0728	0.5		0724	0.4		
	1702	0.4		0958	0.7		1306	0.9		1228	0.9		1258	0.9		1217	1.0		
				1106	0.7		1845	0.1		1943	0.1		1828	0.1		1915	0.1		
				1304	0.7														
				1817	0.3														
07	0009	0.9	22	0158	1.0	07	0202	1.2	22	0213	1.1	07	0147	1.2	22	0134	1.1		
	0547	0.4		0711	0.5		0745	0.4		0819	0.4		0739	0.4		0747	0.3		
	1221	0.9		1130	0.8		1343	0.9		1302	1.0		1332	1.0		1247	1.1		
	1802	0.2		1911	0.2		1939	0.0		2019	0.0		1921	0.0		1956	0.1		
08	0106	1.0	23	0226	1.0	08	0241	1.2	23	0217	1.1	08	0219	1.3	23	0138	1.1		
	0647	0.4		0800	0.5		0826	0.4		0847	0.3		0804	0.3		0809	0.3		
	1253	0.9		1221	0.9		1411	1.0		1338	1.1		1358	1.1		1315	1.2		
	1858	0.1		1958	0.1		2026	-0.1		2058	0.0		2008	-0.2		2032	0.0		
09	0154	1.1	24	0247	1.1	09	0315	1.2	24	0226	1.2	09	0253	1.2	24	0153	1.1		
	0743	0.4		0839	0.4		0904	0.3		0911	0.3		0836	0.3		0838	0.2		
	1326	0.9		1306	1.0		1436	1.1		1409	1.2		1417	1.2		1351	1.2		
	1953	0.0		2041	0.0		2113	-0.2		2136	0.0		2056	-0.2		2106	0.0		
10	0239	1.1	25	0247	1.1	10	0347	1.2	25	0249	1.2	10	0315	1.2	25	0215	1.2		
	0834	0.4		0911	0.4		0941	0.3		0938	0.3		0906	0.3		0904	0.2		
	1358	1.0		1349	1.1		1453	1.1		1447	1.2		1426	1.2		1417	1.3		
	2041	0.0		2117	0.0		2200	-0.2		2209	0.0		2141	-0.2		2143	0.1		
11	0323	1.2	26	0253	1.1	11	0351	1.1	26	0313	1.1	11	0254	1.1	26	0241	1.1		
	0919	0.4		0943	0.4		1011	0.3		1006	0.3		0941	0.3		0938	0.2		
	1428	1.0		1426	1.1		1509	1.2		1515	1.2		1441	1.3		1451	1.3		
	2130	-0.1		2158	0.0		2249	-0.1		2247	0.1		2221	-0.1		2211	0.1		
12	0358	1.2	27	0317	1.1	12	0343	1.0	27	0343	1.1	12	0300	1.0	27	0306	1.1		

1002	0.4	1009	0.4	1047	0.4	1038	0.3	1011	0.3	1008	0.2
1458	1.0	1504	1.1	1534	1.2	1547	1.2	1506	1.3	1515	1.2
2217	-0.1	2238	0.1	2332	0.0	2315	0.2	2304	0.1	2245	0.2
13 0434	1.1	28 0345	1.1	13 0402	1.0	28 0406	1.0	13 0317	1.0	28 0330	1.1
1045	0.4	1038	0.4	1117	0.4	1109	0.3	1047	0.3	1045	0.2
1524	1.0	1543	1.1	1602	1.2	1611	1.1	1538	1.2	1547	1.2
2304	-0.1	2311	0.1			2349	0.3	2351	0.3	2309	0.4
14 0432	1.0	29 0413	1.1	14 0015	0.2	29 0428	1.0	14 0351	1.0	29 0353	1.0
1119	0.4	1106	0.4	0423	0.9	1151	0.3	1126	0.3	1124	0.3
1556	1.0	1613	1.1	1154	0.4	1641	1.1	1609	1.1	1613	1.1
2356	0.0	2353	0.2	1638	1.1					2345	0.5
15 0443	0.9	30 0445	1.0	15 0102	0.3			15 0034	0.5	30 0406	1.0
1156	0.5	1143	0.4	0456	0.9			0413	0.9	1211	0.3
1626	1.0	1647	1.1	0954	0.5			0953	0.4	1653	1.0
				1239	0.5			1215	0.4		
				1711	1.0			1654	0.9		
				2106	0.7			2006	0.7		
				2200	0.7			2221	0.8		
		31 0028	0.3							31 0036	0.6
		0511	0.9							0421	0.9
		1223	0.4							1313	0.4
		1713	1.0							1736	0.8
										2000	0.7
										2223	0.8

2024

UBATUBA - BASE NORTE DO IOUSP

2024

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

IOUSP-BASE NORTE NIVEL MEDIO .66 M CARTA 1613

ABRIL MAIO JUNHO

HORA			HORA			HORA			HORA			HORA					
ALT			ALT			ALT			ALT			ALT					
DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M			
01	0149	0.7	16	1002	0.6	01	0308	0.7	16	0330	0.6	01	0428	0.5	16	0421	0.4
	0439	0.8		1132	0.6		0441	0.7		0858	0.8		1139	0.9		1024	0.9
	0819	0.6		1556	0.4		0726	0.6		1615	0.4		1709	0.2		1711	0.4
	1006	0.6					1036	0.7		2341	0.9					2343	0.9
	1432	0.4					1532	0.3									
	2317	0.9					2328	1.1									
02	0321	0.7	17	0002	0.9	02	0649	0.6	17	0441	0.5	02	0036	0.9	17	0519	0.4
	0447	0.7		0604	0.6		1123	0.9		1023	0.8		0526	0.5		1126	0.9
	0804	0.6		1130	0.7		1643	0.2		1715	0.3		1226	1.0		1804	0.4
	1111	0.7		1706	0.3								1808	0.2			
	1554	0.3															
03	0000	1.1	18	0023	1.0	03	0009	1.1	18	0000	0.9	03	0109	0.9	18	0006	0.9
	0754	0.5		0623	0.5		0543	0.5		0530	0.4		0619	0.4		0611	0.3
	1158	0.8		1124	0.9		1204	1.0		1111	0.9		1309	1.0		1215	1.0
	1706	0.2		1802	0.3		1743	0.1		1804	0.3		1902	0.2		1853	0.3
04	0043	1.2	19	0043	1.0	04	0054	1.1	19	0017	1.0	04	0134	0.9	19	0028	1.0
	0700	0.5		0641	0.4		0615	0.4		0609	0.3		0708	0.3		0702	0.2
	1236	1.0		1151	1.0		1241	1.1		1151	1.0		1349	1.1		1256	1.0
	1808	0.1		1847	0.2		1836	0.0		1847	0.2		1954	0.2		1939	0.3
05	0117	1.2	20	0053	1.0	05	0130	1.1	20	0028	1.0	05	0028	0.9	20	0056	1.0
	0704	0.4		0702	0.3		0653	0.3		0651	0.2		0756	0.2		0751	0.1
	1306	1.1		1219	1.1		1308	1.1		1223	1.1		1424	1.1		1338	1.1
	1900	-0.1		1923	0.1		1923	0.0		1924	0.2		2043	0.3		2023	0.4
06	0154	1.2	21	0102	1.1	06	0153	1.0	21	0049	1.0	06	0058	0.9	21	0126	1.0
	0730	0.3		0730	0.2		0730	0.3		0730	0.2		0845	0.1		0836	0.0
	1332	1.1		1251	1.1		1324	1.2		1258	1.1		1419	1.1		1423	1.1
	1949	-0.1		2000	0.1		2008	0.0		2002	0.2		2124	0.4		2108	0.4
07	0223	1.1	22	0119	1.1	07	0121	0.9	22	0111	1.1	07	0132	1.0	22	0202	1.0
	0800	0.3		0802	0.2		0809	0.2		0809	0.1		0928	0.1		0921	0.0
	1345	1.2		1319	1.2		1330	1.2		1330	1.2		1439	1.1		1506	1.1
	2034	-0.1		2036	0.1		2056	0.1		2043	0.3		2206	0.5		2154	0.4
08	0228	1.1	23	0143	1.1	08	0121	1.0	23	0139	1.1	08	0209	1.0	23	0236	1.0
	0836	0.2		0838	0.1		0853	0.2		0853	0.1		1011	0.1		1008	0.0
	1354	1.2		1353	1.2		1358	1.2		1406	1.2		1517	1.0		1543	1.1
	2113	-0.1		2108	0.1		2141	0.3		2119	0.3		2249	0.5		2239	0.5
09	0204	1.0	24	0208	1.1	09	0151	1.0	24	0208	1.1	09	0256	1.0	24	0311	1.0
	0909	0.2		0909	0.1		0938	0.1		0934	0.1		1058	0.1		1058	0.0
	1413	1.3		1421	1.2		1428	1.1		1445	1.1		1600	1.0		1630	1.1
	2158	0.1		2145	0.2		2221	0.4		2200	0.4		2321	0.6		2321	0.5
10	0217	1.0	25	0234	1.1	10	0219	1.0	25	0236	1.0	10	0339	1.0	25	0349	1.0
	0949	0.2		0949	0.1		1021	0.1		1017	0.1		1147	0.2		1151	0.0
	1445	1.2		1456	1.2		1509	1.1		1523	1.1		1639	0.9		1721	1.0
	2243	0.2		2213	0.3		2302	0.5		2245	0.5		2356	0.6			
11	0249	1.0	26	0258	1.1	11	0258	1.0	26	0304	1.0	11	0423	1.0	26	0002	0.5
	1030	0.2		1028	0.2		1106	0.2		1104	0.1		1236	0.2		0423	0.9
	1515	1.1		1526	1.1		1556	1.0		1609	1.0		1723	0.9		1243	0.1
	2323	0.4		2251	0.4		2347	0.6		2332	0.6					1854	0.9
																1949	0.9
12	0313	1.0	27	0317	1.0	12	0336	1.0	27	0330	0.9	12	0034	0.6	27	0051	0.5
	1113	0.3		1109	0.2		1200	0.2		1158	0.1		0511	0.9		0504	0.9
	1558	1.0		1604	1.0		1641	0.9		1704	0.9		1324	0.3		1338	0.2
				2332	0.6		1906	0.8					1815	0.8		2119	0.8
							2058	0.8									
13	0004	0.6	28	0339	0.9	13	0026	0.7	28	0024	0.6	13	0119	0.6	28	0138	0.6
	0349	1.0		1202	0.2		0411	0.9		0402	0.8		0615	0.9		0553	0.9
	1206	0.3		1647	0.9		1256	0.3		1258	0.2		1419	0.4		1436	0.2
	1641	0.9					1734	0.8		2056	0.9		1930	0.8		1953	0.7
	1926	0.7					1923	0.8					2138	0.8		2238	0.8
	2202	0.8					2158	0.8									
14	0054	0.7	29	0028	0.6	14	0113	0.7	29	0121	0.6	14	0215	0.6	29	0232	0.6
	0413	0.9		0358	0.9		0500	0.8		0443	0.8		0741	0.8		0654	0.8
	0917	0.4		1304	0.3		1400	0.3		1400	0.2		1519	0.4		0900	0.8
	1311	0.4		1741	0.8		2239	0.8		2202	1.0		2243	0.8		1006	0.8

1732	0.8	1900	0.8							1538	0.3						
1945	0.7	2147	0.9							2339	0.8						
2300	0.9																
15	0158	0.8	30	0143	0.7	15	0213	0.7	30	0223	0.6	15	0317	0.5	30	0336	0.5
	0443	0.8		0409	0.8		0632	0.8		0547	0.7		0906	0.8		1139	0.9
	0941	0.5		0745	0.6		1508	0.4		0700	0.7		1617	0.4		1643	0.3
	1102	0.5		0917	0.6		2308	0.9		0941	0.8		2323	0.8			
	1430	0.4		1415	0.3					1504	0.2						
	2338	0.9		2245	1.0					2258	1.0						
										31	0326	0.6					
											1047	0.9					
											1608	0.2					
											2352	1.0					

2024

UBATUBA - BASE NORTE DO IOUSP

2024

LATITUDE 23 30.0 S

LONGITUDE 45 7.3 W

FUSO + 3 HORAS

IOUSP-BASE NORTE

NIVEL MEDIO .66 M

CARTA 1613

OUTUBRO

NOVEMBRO

DEZEMBRO

HORA			ALT			HORA			ALT			HORA			ALT		
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	0100	1.2	16	0136	1.2	01	0138	1.2	16	0151	1.1	01	0158	1.1	16	0404	1.1
	0815	0.1		0806	-0.1		0854	0.2		0917	0.2		0906	0.4		0954	0.4
	1332	1.1		1419	1.1		1353	1.1		1332	1.0		1358	1.1		1356	1.0
	2021	0.2		2011	0.2		2056	0.1		2117	0.1		2117	0.1		2158	0.0
02	0130	1.2	17	0145	1.2	02	0208	1.2	17	0219	1.1	02	0234	1.1	17	0323	1.0
	0853	0.1		0853	-0.1		0928	0.3		1002	0.4		0947	0.4		1036	0.5
	1356	1.1		1358	1.0		1417	1.1		1402	1.0		1426	1.0		1438	1.0
	2049	0.2		2051	0.2		2136	0.1		2204	0.1		2200	0.1		2247	0.0
03	0202	1.3	18	0202	1.2	03	0243	1.2	18	0300	1.1	03	0315	1.1	18	0347	1.0
	0924	0.1		0938	0.0		1000	0.3		1051	0.5		1028	0.5		1108	0.5
	1421	1.1		1404	1.0		1447	1.1		1439	1.0		1458	1.0		1519	1.0
	2121	0.2		2130	0.2		2211	0.1		2254	0.1		2249	0.1		2332	0.1
04	0234	1.3	19	0226	1.2	04	0315	1.1	19	0339	1.0	04	0400	1.1	19	0421	1.0
	0958	0.2		1019	0.2		1036	0.4		1134	0.6		1109	0.5		1143	0.6
	1451	1.1		1426	1.0		1506	1.0		1513	1.0		1524	0.9		1606	1.0
	2154	0.2		2211	0.2		2254	0.2		2347	0.2		2339	0.1			
05	0302	1.2	20	0302	1.1	05	0354	1.0	20	0421	0.9	05	0445	1.0	20	0017	0.2
	1028	0.3		1102	0.4		1111	0.5		0643	0.8		1158	0.6		0502	0.9
	1513	1.1		1458	1.0		1524	0.9		0821	0.8		1600	0.9		1213	0.6
	2230	0.2		2258	0.2		2345	0.2		1213	0.7					1656	1.0
										1600	0.9						
06	0334	1.2	21	0341	1.0	06	0434	1.0	21	0043	0.2	06	0034	0.2	21	0104	0.3
	1056	0.4		1151	0.6		1202	0.6		0511	0.8		0743	0.9		0547	0.8
	1538	1.0		1526	1.0		1549	0.9		0706	0.8		1253	0.6		1256	0.6
	2306	0.2		2354	0.3					0926	0.8		1638	0.8		1751	0.9
										1300	0.7						
										1651	0.9						
07	0404	1.1	22	0419	0.9	07	0043	0.3	22	0141	0.3	07	0130	0.2	22	0200	0.4
	1126	0.5		0700	0.8		0523	0.9		0613	0.8		0911	0.9		0636	0.8
	1554	1.0		0919	0.8		0704	0.8		0743	0.7		1347	0.6		1349	0.5
	2353	0.3		1241	0.7		0856	0.9		1011	0.8		1728	0.8		1854	0.9
				1600	0.9		1304	0.7		1353	0.7		1911	0.8			
							1604	0.8		1800	0.8						
08	0438	1.0	23	0056	0.3	08	0151	0.3	23	0247	0.4	08	0232	0.2	23	0256	0.4
	1206	0.6		0508	0.8		1006	0.9		1054	0.8		1019	0.9		0747	0.8
	1604	0.9		0713	0.7		1419	0.7		1453	0.6		1445	0.6		1449	0.5
				1032	0.9		1643	0.7		1954	0.8		2158	0.8		2009	0.8
				1341	0.8		1915	0.6									
				1632	0.9		2151	0.7									
				2117	0.5												
				2239	0.5												
09	0053	0.3	24	0204	0.4	09	0258	0.3	24	0353	0.4	09	0334	0.2	24	0354	0.4
	0515	0.9		0617	0.7		1058	1.0		1121	0.8		1113	0.9		1036	0.8
	0806	0.8		0732	0.7		1543	0.6		1600	0.5		1547	0.5		1554	0.5
	0958	0.8		1113	0.9		1854	0.6		2130	0.8		2304	0.9		2143	0.8
	1311	0.7		1508	0.8		2251	0.8									
	1615	0.8		1702	0.8												
				2153	0.6												
				2309	0.6												
10	0200	0.4	25	0324	0.4	10	0404	0.2	25	0454	0.4	10	0438	0.2	25	0453	0.4
	0619	0.7		1151	0.9		1145	1.1		1145	0.9		1204	0.9		1124	0.8
	0719	0.7		1724	0.7		1651	0.5		1700	0.5		1649	0.5		1658	0.4
	1058	0.9		2043	0.7		2336	0.9		2239	0.9					2309	0.9
	1443	0.7		2206	0.7												
	1638	0.7															
	2000	0.6															
	2243	0.7															
11	0317	0.3	26	0443	0.3	11	0508	0.1	26	0547	0.3	11	0002	1.0	26	0547	0.4
	1139	1.0		1208	0.9		1224	1.1		1153	0.9		0538	0.2		1143	0.9
	1951	0.6		1753	0.6		1739	0.4		1749	0.4		1253	0.9		1756	0.3
	2330	0.8		2249	0.8					2326	1.0		1749	0.4			
12	0436	0.2	27	0541	0.3	12	0015	1.0	27	0628	0.3	12	0058	1.0	27	0013	0.9
	1213	1.1		1230	0.9		0604	0.1		1209	1.0		0636	0.2		0636	0.4

1845	0.5		1819	0.4	1304	1.1	1832	0.3	1328	0.9	1215	0.9					
			2324	0.9	1821	0.4			1843	0.3	1847	0.2					
13	0008	0.9	28	0626	0.2	13	0053	1.1	28	0006	1.0	13	0151	1.1	28	0054	1.0
	0541	0.1		1238	1.0		0656	0.0		0708	0.3		0730	0.3		0723	0.4
	1254	1.2		1843	0.3		1339	1.0		1228	1.0		1330	0.8		1245	1.0
	1836	0.4					1904	0.3		1913	0.2		1936	0.2		1936	0.1
14	0045	1.0	29	0000	1.0	14	0124	1.1	29	0045	1.1	14	0243	1.1	29	0136	1.1
	0634	0.0		0706	0.2		0747	0.1		0751	0.3		0819	0.3		0809	0.4
	1328	1.2		1239	1.0		1339	1.0		1258	1.0		1245	0.9		1317	1.0
	1902	0.3		1913	0.3		1949	0.2		1956	0.1		2024	0.1		2019	0.0
15	0111	1.1	30	0030	1.1	15	0134	1.2	30	0119	1.1	15	0330	1.1	30	0217	1.1
	0721	-0.1		0745	0.1		0834	0.1		0826	0.3		0906	0.4		0856	0.4
	1400	1.2		1300	1.1		1311	0.9		1324	1.1		1313	0.9		1354	1.0
	1938	0.3		1945	0.2		2034	0.2		2038	0.1		2109	0.0		2104	0.0
			31	0104	1.2										31	0251	1.1
				0819	0.1											0939	0.4
				1323	1.1											1430	1.0
				2019	0.1											2153	0.0

1641	1.2	1558	1.4	1638	1.2	1636	1.4	1609	1.3	1615	1.4
2256	-0.1	2309	0.2			2247	0.4	2330	0.3	2202	0.4
14 0515	1.4	29 0454	1.3	14 0004	0.1	29 0458	1.2	14 0421	1.2	29 0411	1.2
1032	0.6	1053	0.3	0511	1.2	1132	0.3	0958	0.4	1108	0.3
1724	1.1	1626	1.3	1038	0.4	1704	1.3	1632	1.2	1651	1.3
2349	0.0	2347	0.2	1651	1.1	2308	0.5			2215	0.5
15 0541	1.3	30 0517	1.3	15 0054	0.4			15 0013	0.5	30 0432	1.1
1054	0.6	1126	0.4	0534	1.1			0439	1.1	1200	0.4
1711	1.1	1656	1.3	1030	0.5			0930	0.4	1724	1.2
				1700	1.0			1656	1.1	2224	0.7
				2019	0.9			2011	0.8		
				2154	0.9			2208	0.9		
		31 0021	0.3							31 0432	1.0
		0549	1.2							1308	0.4
		1202	0.4							1811	1.0
		1732	1.2							2208	0.8

2024

PORTO DE SANTOS - TORRE GRANDE

2024

LATITUDE 23 57.0 S			LONGITUDE 46 18.5 W			FUSO + 3 HORAS											
PORTO DE SANTOS			NIVEL MEDIO .77 M			CARTA 1701											
ABRIL			MAIO			JUNHO											
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M						
01	0328	0.9	16	0002	1.1	01	0002	1.0	16	0426	0.7	01	0702	0.5	16	0511	0.5
	0809	0.7		0838	0.7		0658	0.6		1028	1.0		1147	1.2		1102	1.1
	1051	0.7		1124	0.8		1058	1.0		1549	0.4		1653	0.2		1630	0.5
	1424	0.4		1530	0.4		1519	0.3		2354	1.1		2326	1.1			
	1953	0.9															
	2119	0.9															
02	0041	1.0	17	0034	1.1	02	0013	1.1	17	0530	0.6	02	0719	0.5	17	0026	1.1
	0724	0.6		0651	0.7		0706	0.5		1104	1.1		1232	1.3		0554	0.4
	1139	0.9		1134	1.0		1139	1.1		1643	0.4		1749	0.2		1151	1.2
	1545	0.4		1639	0.4		1624	0.2								1832	0.5
03	0054	1.2	18	0054	1.2	03	0039	1.2	18	0023	1.1	03	0021	1.1	18	0108	1.1
	0736	0.5		0617	0.6		0726	0.4		0602	0.4		0724	0.4		0626	0.3
	1217	1.1		1154	1.1		1217	1.3		1143	1.2		1323	1.3		1238	1.2
	1656	0.2		1747	0.3		1724	0.1		1749	0.4		1841	0.2		1945	0.5
04	0113	1.3	19	0109	1.3	04	0056	1.3	19	0053	1.2	04	0058	1.1	19	0145	1.2
	0754	0.4		0634	0.4		0747	0.4		0632	0.3		0723	0.3		0700	0.2
	1256	1.2		1221	1.2		1256	1.4		1217	1.3		1417	1.3		1328	1.3
	1758	0.1		1843	0.3		1819	0.0		1854	0.4		1930	0.3		2028	0.4
05	0141	1.4	20	0130	1.3	05	0115	1.3	20	0123	1.3	05	0128	1.1	20	0215	1.2
	0811	0.3		0700	0.3		0754	0.3		0700	0.2		0747	0.2		0732	0.1
	1334	1.4		1254	1.4		1334	1.4		1256	1.4		1513	1.3		1419	1.4
	1847	-0.1		1928	0.2		1908	0.0		1941	0.3		2015	0.3		2058	0.4
06	0200	1.4	21	0151	1.4	06	0130	1.3	21	0147	1.3	06	0158	1.1	21	0236	1.2
	0832	0.3		0728	0.2		0753	0.3		0726	0.1		0823	0.2		0809	0.0
	1408	1.5		1324	1.4		1413	1.5		1334	1.4		1553	1.3		1508	1.4
	1932	-0.2		2002	0.2		1953	0.0		2021	0.3		2100	0.4		2130	0.4
07	0219	1.4	22	0209	1.4	07	0153	1.3	22	0209	1.3	07	0223	1.1	22	0253	1.2
	0836	0.3		0758	0.1		0808	0.2		0758	0.1		0908	0.2		0856	0.0
	1438	1.5		1356	1.5		1438	1.4		1411	1.4		1632	1.3		1554	1.4
	2015	-0.2		2032	0.2		2034	0.1		2041	0.3		2138	0.5		2149	0.5
08	0230	1.4	23	0228	1.4	08	0209	1.2	23	0223	1.3	08	0253	1.2	23	0313	1.1
	0838	0.3		0826	0.1		0830	0.2		0828	0.1		1002	0.2		0947	0.0
	1504	1.5		1426	1.5		1511	1.4		1453	1.4		1641	1.2		1638	1.4
	2058	-0.1		2051	0.2		2113	0.2		2115	0.4		2211	0.5		2215	0.5
09	0249	1.3	24	0243	1.4	09	0234	1.2	24	0239	1.2	09	0313	1.2	24	0332	1.1
	0854	0.2		0856	0.1		0908	0.2		0908	0.1		1100	0.2		1043	0.0
	1517	1.5		1500	1.5		1532	1.3		1534	1.4		1708	1.2		1715	1.4
	2139	0.0		2119	0.3		2156	0.4		2134	0.5		2251	0.6		2236	0.6
10	0304	1.3	25	0300	1.3	10	0256	1.2	25	0300	1.2	10	0343	1.2	25	0356	1.1
	0917	0.3		0928	0.1		0956	0.3		0956	0.1		1158	0.2		1143	0.0
	1536	1.4		1532	1.5		1604	1.2		1617	1.4		1736	1.2		1754	1.3
	2217	0.2		2130	0.4		2234	0.5		2204	0.5		2323	0.6		2300	0.6
11	0321	1.2	26	0317	1.3	11	0311	1.1	26	0317	1.1	11	0409	1.1	26	0402	1.0
	0941	0.3		1006	0.2		1102	0.3		1053	0.1		1249	0.3		0608	1.0
	1600	1.3		1606	1.4		1639	1.1		1704	1.3		1809	1.1		0726	1.0
	2258	0.4		2151	0.5		2309	0.6		2230	0.6					1241	0.1
																1828	1.2
																2324	0.7
																2324	0.7
12	0341	1.2	27	0339	1.2	12	0334	1.1	27	0334	1.0	12	0002	0.6	27	0349	0.9
	1008	0.4		1058	0.2		1208	0.3		1156	0.2		0449	1.1		0602	0.9
	1623	1.2		1647	1.3		1719	1.1		1756	1.2		1334	0.3		0845	1.0
	2341	0.6		2215	0.6		2354	0.7		2302	0.7		1856	1.1		1334	0.1
																1906	1.1
																2354	0.7
13	0354	1.1	28	0354	1.1	13	0354	1.1	28	0323	0.9	13	0056	0.7	28	0341	0.9
	0853	0.4		1158	0.3		1308	0.4		0654	0.8		0549	1.0		0608	0.8
	1145	0.4		1732	1.2		1809	1.0		0817	0.8		1413	0.4		0945	1.0
	1700	1.0		2239	0.7					1258	0.2		1953	1.0		1424	0.2
	2000	0.9								1853	1.1					1951	1.0
	2156	0.9								2339	0.8						
14	0028	0.8	29	0341	1.0	14	0049	0.8	29	0254	0.9	14	0208	0.7	29	0023	0.7
	0406	1.1		0853	0.7		0417	1.0		0624	0.7		0838	0.9		0356	0.8
	0900	0.5		1306	0.3		1402	0.4		0928	0.9		1456	0.4		0632	0.7

1100	0.5	1836	1.1	2247	0.9	1358	0.2	2115	1.0	1041	1.1
1309	0.5	2254	0.9			1956	1.1			1517	0.3
1741	0.9									2039	1.0
2004	0.8										
2311	1.0										
15 0147	0.9	30 0245	0.9	15 0206	0.8	30 0038	0.9	15 0356	0.6	30 0213	0.7
0415	1.0	0706	0.7	0454	0.9	0249	0.9	1006	1.0	0358	0.8
0906	0.6	1008	0.8	0943	0.8	0628	0.7	1539	0.5	0654	0.7
1111	0.7	1411	0.3	1456	0.4	1017	1.0	2323	1.0	1138	1.1
1421	0.5	2028	1.0	2323	1.0	1456	0.2			1615	0.4
1947	0.8	2200	1.0			2104	1.0			2145	0.9
						31 0647	0.6				
						1102	1.1				
						1554	0.2				
						2217	1.0				

2024

PORTO DE SANTOS - TORRE GRANDE

2024

LATITUDE 23 57.0 S				LONGITUDE 46 18.5 W				FUSO + 3 HORAS									
PORTO DE SANTOS				NIVEL MEDIO .77 M				CARTA 1701									
JULHO				AGOSTO				SETEMBRO									
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA							
H M	M	H M	M	H M	M	H M	M	H M	M	H M	M						
01	0702	0.6	16	0024	0.9	01	0147	1.0	16	0141	1.1	01	0151	1.3	16	0219	1.4
	1239	1.2		0504	0.5		0708	0.3		0615	0.2		0753	0.0		0730	-0.2
	1717	0.5		1147	1.0		1439	1.3		1400	1.3		1454	1.4		1436	1.5
	2326	0.9		1909	0.6		1924	0.6		2045	0.4		2006	0.3		2100	0.3
02	0702	0.5	17	0109	1.0	02	0158	1.1	17	0211	1.2	02	0209	1.4	17	0249	1.5
	1345	1.2		0554	0.4		0734	0.2		0702	0.0		0826	0.0		0811	-0.3
	1821	0.5		1254	1.1		1508	1.4		1436	1.5		1508	1.4		1454	1.5
				2004	0.5		2000	0.5		2106	0.4		2038	0.2		2113	0.3
03	0123	1.0	18	0151	1.1	03	0213	1.2	18	0247	1.3	03	0236	1.5	18	0317	1.6
	0709	0.3		0636	0.2		0809	0.1		0747	-0.1		0900	0.0		0856	-0.3
	1441	1.3		1351	1.3		1536	1.4		1506	1.5		1523	1.4		1511	1.5
	1919	0.5		2045	0.5		2028	0.4		2128	0.4		2106	0.1		2119	0.3
04	0147	1.0	19	0224	1.2	04	0236	1.3	19	0317	1.4	04	0258	1.6	19	0332	1.5
	0739	0.2		0713	0.1		0849	0.0		0830	-0.2		0934	0.0		0938	-0.2
	1526	1.3		1439	1.4		1551	1.4		1536	1.6		1539	1.4		1530	1.4
	2006	0.5		2111	0.4		2100	0.3		2141	0.3		2139	0.1		2136	0.3
05	0211	1.1	20	0256	1.2	05	0258	1.4	20	0341	1.4	05	0323	1.6	20	0343	1.5
	0819	0.1		0800	-0.1		0926	0.0		0915	-0.3		1006	0.1		1019	0.0
	1600	1.4		1521	1.5		1604	1.4		1558	1.5		1558	1.4		1553	1.3
	2047	0.4		2139	0.4		2132	0.3		2149	0.3		2208	0.2		2156	0.3
06	0239	1.2	21	0330	1.3	06	0317	1.4	21	0404	1.4	06	0351	1.5	21	0358	1.4
	0902	0.1		0845	-0.1		1008	0.0		1004	-0.2		1030	0.3		1104	0.2
	1626	1.4		1558	1.5		1619	1.4		1617	1.4		1617	1.3		1608	1.2
	2119	0.4		2154	0.4		2202	0.2		2204	0.4		2241	0.2		2211	0.3
07	0302	1.2	22	0353	1.3	07	0345	1.5	22	0411	1.4	07	0415	1.5	22	0411	1.2
	0951	0.1		0934	-0.2		1049	0.1		1051	-0.1		1017	0.4		1153	0.5
	1639	1.3		1630	1.5		1639	1.4		1638	1.3		1639	1.2		1624	1.1
	2156	0.4		2211	0.4		2236	0.3		2219	0.4		2311	0.3		2143	0.4
08	0326	1.3	23	0421	1.3	08	0408	1.4	23	0415	1.3	08	0447	1.4	23	0434	1.1
	1039	0.1		1024	-0.2		1128	0.2		1139	0.1		1000	0.5		0756	0.8
	1654	1.3		1658	1.4		1702	1.3		1658	1.2		1700	1.1		0943	0.9
	2226	0.4		2224	0.5		2304	0.3		2234	0.4		2349	0.4		1249	0.7
																1639	1.0
																2119	0.4
09	0353	1.3	24	0426	1.2	09	0438	1.4	24	0428	1.2	09	0515	1.2	24	0456	0.9
	1128	0.1		1119	-0.1		1204	0.3		1226	0.3		1008	0.6		0758	0.7
	1715	1.3		1721	1.4		1724	1.2		1717	1.1		1717	1.0		1111	1.0
	2300	0.4		2245	0.5		2339	0.4		2236	0.4					1358	0.9
																1641	1.0
																2126	0.5
10	0419	1.3	25	0436	1.2	10	0506	1.3	25	0441	1.1	10	0051	0.5	25	0006	0.6
	1211	0.2		1211	0.0		1241	0.4		0806	0.9		0556	1.1		0156	0.6
	1743	1.2		1749	1.3		1753	1.1		0917	0.9		1008	0.7		0515	0.8
	2334	0.4		2302	0.5					1319	0.5		1709	0.9		0754	0.7
										1738	1.0		2156	0.7		1209	1.1
										2219	0.4		2258	0.7		2123	0.6
11	0453	1.2	26	0443	1.1	11	0017	0.5	26	0453	1.0	11	0209	0.5	26	0015	0.7
	1254	0.3		1302	0.2		0543	1.1		0804	0.8		0658	0.9		0349	0.5
	1811	1.2		1811	1.1		1317	0.6		1106	1.0		0953	0.8		0654	0.6
				2315	0.5		1817	1.0		1421	0.7		1247	0.9		1253	1.2
										1749	0.9		2026	0.7		2021	0.7
										2215	0.5		2358	0.8			
12	0008	0.5	27	0438	1.0	12	0117	0.5	27	0502	0.8	12	0343	0.5	27	0026	0.9
	0532	1.1		0711	0.9		0626	1.0		0802	0.7		1256	1.1		0532	0.4
	1334	0.4		0915	1.0		1406	0.7		1215	1.1		1953	0.6		1315	1.3
	1847	1.1		1356	0.3		1845	0.9		1543	0.8					1928	0.6
				1841	1.0					1751	0.9						
				2321	0.5					2213	0.6						
13	0058	0.6	28	0441	0.9	13	0249	0.6	28	0108	0.7	13	0039	1.0	28	0036	1.1
	0626	1.0		0713	0.8		0756	0.9		0406	0.6		0500	0.4		0623	0.3
	1408	0.5		1045	1.0		1156	0.9		0739	0.6		1313	1.2		1339	1.3
	1926	1.0		1453	0.5		1523	0.7		1306	1.2		2002	0.5		1851	0.5
				1906	0.9		1738	0.8		2126	0.7						

			2317	0.6		2043	0.8										
14	0213	0.6	29	0456	0.8	14	0023	0.8	29	0111	0.9	14	0111	1.1	29	0053	1.2
	0802	0.9		0713	0.7		0413	0.5		0649	0.4		0600	0.2		0658	0.2
	1453	0.6		1200	1.1		1245	1.0		1349	1.3		1345	1.4		1354	1.4
	2038	0.9		1554	0.6		1954	0.6		2030	0.6		2024	0.4		1911	0.4
				1928	0.8												
				2313	0.7												
15	0353	0.6	30	0143	0.7	15	0102	1.0	30	0121	1.0	15	0149	1.3	30	0113	1.4
	1013	1.0		0715	0.6		0523	0.4		0653	0.3		0647	0.0		0730	0.1
	1547	0.6		1302	1.2		1321	1.2		1413	1.4		1409	1.5		1409	1.4
				1706	0.7		2015	0.5		1926	0.5		2047	0.3		1939	0.2
				1949	0.7												
				2209	0.7												
			31	0139	0.8				31	0134	1.2						
				0704	0.5					0721	0.1						
				1358	1.3					1439	1.4						
				1824	0.6					1939	0.4						

2024

PORTO DE SANTOS - TORRE GRANDE

2024

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		DIA		DIA		DIA		DIA		DIA	
H M	M	H M	M	H M	M	H M	M	H M	M	H M	M
01 0141	1.5	16 0221	1.5	01 0209	1.5	16 0321	1.4	01 0238	1.4	16 0434	1.3
0802	0.1	0751	-0.2	0836	0.2	0853	0.2	0851	0.4	0915	0.4
1426	1.4	1408	1.4	1430	1.3	1417	1.2	1432	1.2	1447	1.1
2008	0.1	2030	0.3	2043	0.1	2100	0.2	2054	0.1	2151	0.1
02 0206	1.5	17 0245	1.6	02 0245	1.5	17 0341	1.3	02 0315	1.4	17 0500	1.3
0834	0.1	0830	-0.1	0851	0.3	0932	0.4	0919	0.5	0956	0.5
1445	1.4	1426	1.4	1447	1.3	1447	1.1	1451	1.2	1509	1.1
2041	0.1	2045	0.2	2115	0.1	2149	0.2	2138	0.1	2243	0.1
03 0234	1.6	18 0311	1.5	03 0315	1.5	18 0411	1.2	03 0358	1.4	18 0517	1.2
0902	0.1	0911	0.0	0911	0.4	1009	0.5	0939	0.5	1028	0.6
1500	1.4	1451	1.3	1504	1.2	1504	1.1	1508	1.1	1541	1.1
2111	0.1	2111	0.2	2154	0.1	2249	0.3	2228	0.1	2336	0.2
04 0300	1.6	19 0324	1.4	04 0353	1.4	19 0436	1.1	04 0441	1.3	19 0528	1.2
0926	0.2	0954	0.2	0923	0.5	1053	0.6	1009	0.6	1104	0.6
1517	1.4	1508	1.2	1521	1.2	1526	1.1	1528	1.0	1609	1.1
2143	0.1	2143	0.3	2239	0.2	2351	0.3	2326	0.1		
05 0330	1.5	20 0349	1.3	05 0426	1.3	20 0513	1.0	05 0526	1.3	20 0021	0.2
0926	0.3	1034	0.4	0945	0.6	1134	0.7	1043	0.7	0556	1.1
1538	1.3	1528	1.1	1543	1.1	1547	1.1	1543	1.0	1145	0.6
2215	0.2	2224	0.3	2334	0.3					1651	1.1
06 0400	1.5	21 0408	1.2	06 0509	1.2	21 0049	0.3	06 0026	0.2	21 0106	0.3
0923	0.4	1113	0.6	1011	0.7	0604	1.0	0619	1.2	0632	1.1
1558	1.2	1545	1.1	1547	1.0	1219	0.8	1121	0.7	1230	0.6
2251	0.3	2330	0.4			1611	1.0	1521	0.9	1741	1.1
								1811	0.8		
								2043	0.9		
07 0430	1.4	22 0443	1.0	07 0039	0.3	22 0143	0.3	07 0126	0.2	22 0154	0.4
0936	0.5	0726	0.9	0606	1.1	1002	0.9	0719	1.1	0717	1.0
1613	1.1	0906	0.9	1041	0.8	1332	0.8	1213	0.8	1336	0.6
2338	0.3	1204	0.8	1504	0.9	1658	0.9	1506	0.9	1904	1.0
		1554	1.0	1906	0.7			1808	0.8		
		2049	0.5	2128	0.8			2143	1.0		
		2219	0.5								
08 0504	1.2	23 0049	0.4	08 0147	0.3	23 0236	0.4	08 0224	0.2	23 0239	0.4
0951	0.6	0515	0.9	0741	1.0	1053	1.0	0826	1.1	0828	1.0
1623	1.0	0738	0.8	1849	0.7	1500	0.8	1345	0.8	1456	0.6
		1051	1.0	2226	0.9	2149	0.9	1509	0.8	2104	1.0
		1311	0.9					1823	0.7		
		1600	1.0					2234	1.1		
		2058	0.6								
		2258	0.6								
09 0043	0.4	24 0200	0.5	09 0254	0.3	24 0328	0.4	09 0323	0.2	24 0326	0.5
0551	1.1	1143	1.0	1053	1.0	1123	1.0	0934	1.0	1030	1.0
0956	0.8	1504	0.9	1854	0.6	1626	0.6	1847	0.6	1613	0.5
1551	0.9	2049	0.7	2311	1.1	2239	1.0	2323	1.2	2230	1.0
2026	0.7	2311	0.8								
2215	0.7										
10 0158	0.4	25 0309	0.4	10 0400	0.2	25 0430	0.4	10 0423	0.2	25 0434	0.5
0706	0.9	1209	1.1	1139	1.1	1154	1.1	1038	1.1	1158	1.0
0932	0.9	1906	0.7	1908	0.5	1721	0.5	1900	0.5	1715	0.4
1239	1.0	2323	0.9	2354	1.2	2319	1.1			2332	1.1
1928	0.6										
2313	0.8										
11 0313	0.4	26 0424	0.4	11 0500	0.1	26 0536	0.4	11 0015	1.3	26 0621	0.5
1232	1.1	1236	1.2	1209	1.2	1228	1.2	0521	0.2	1251	1.1
1921	0.5	1804	0.6	1930	0.4	1802	0.4	1134	1.1	1802	0.3
2358	1.0	2339	1.1					1911	0.5		
12 0428	0.3	27 0532	0.3	12 0036	1.3	27 0000	1.2	12 0111	1.3	27 0024	1.2
1251	1.2	1253	1.2	0554	0.0	0636	0.4	0617	0.2	0724	0.5
1941	0.4	1813	0.5	1234	1.3	1300	1.2	1224	1.1	1332	1.1
				1943	0.4	1838	0.3	1911	0.4	1841	0.2
13 0036	1.2	28 0004	1.2	13 0119	1.4	28 0039	1.3	13 0208	1.4	28 0115	1.3
0532	0.1	0624	0.3	0643	0.0	0723	0.4	0708	0.3	0804	0.5

	1308	1.3		1308	1.3		1302	1.3		1332	1.2		1308	1.1		1408	1.2
	1958	0.4		1839	0.3		1943	0.3		1909	0.2		1934	0.3		1917	0.1
14	0111	1.3	29	0036	1.3	14	0156	1.5	29	0117	1.4	14	0302	1.4	29	0204	1.3
	0623	0.0		0704	0.2		0726	0.0		0756	0.4		0756	0.3		0839	0.4
	1330	1.4		1330	1.3		1326	1.3		1358	1.2		1345	1.1		1439	1.2
	2015	0.3		1908	0.2		1954	0.3		1943	0.1		2011	0.2		1956	0.1
15	0147	1.5	30	0106	1.4	15	0238	1.5	30	0158	1.4	15	0351	1.4	30	0249	1.4
	0708	-0.2		0739	0.2		0809	0.1		0830	0.4		0838	0.4		0908	0.4
	1349	1.4		1353	1.4		1356	1.2		1419	1.2		1413	1.1		1509	1.2
	2028	0.3		1941	0.1		2023	0.2		2015	0.1		2058	0.2		2039	0.0
			31	0141	1.5										31	0330	1.4
				0811	0.2											0932	0.5
				1413	1.4											1528	1.2
				2011	0.1											2124	0.0

2024

CANANEIA - BASE SUL DO IOUSP

2024

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		DIA				DIA		DIA			DIA		DIA				
H M	M	H M	M			H M	M	H M	M		H M	M	H M	M			
01	0653	1.3	16	0043	0.2	01	0741	1.1	16	0008	0.7	01	0658	1.1	16	0236	1.0
	1121	0.5		0647	1.3		1208	0.4		0300	0.8		1143	0.4		0553	0.8
	1721	1.1		1045	0.4		1908	1.1		0502	0.8		1839	1.2		0724	0.8
	2353	0.4		1438	1.1					0753	0.9		2313	0.5		1119	0.3
				1711	0.9					1143	0.3					1524	0.9
				2002	1.1					1549	1.1					1802	0.8
										1851	0.8					2100	1.0
										2151	1.0					2339	0.8
02	0738	1.2	17	0128	0.4	02	0004	0.5	17	0038	0.8	02	0308	0.9	17	0256	1.1
	1200	0.5		0730	1.2		0839	1.0		0304	0.9		0523	0.8		0651	0.7
	1853	1.0		1121	0.4		1256	0.5		0632	0.7		0800	0.9		0845	0.8
				1515	1.1		2019	1.1		0854	0.8		1219	0.5		1206	0.5
				1813	0.9					1228	0.5		1943	1.1		1554	0.8
				2108	1.1					1613	0.9		2345	0.6		1845	0.7
										1921	0.7					2354	1.0
										2323	1.0						
03	0036	0.5	18	0317	0.6	03	0043	0.6	18	0117	1.0	03	0304	1.0	18	0300	1.1
	0828	1.1		0817	1.0		0349	0.8		0300	1.0		0624	0.7		0719	0.6
	1249	0.6		1204	0.4		0606	0.7		0723	0.7		0928	0.9		1017	0.8
	2013	1.0		1558	1.1		0953	1.0		1015	0.8		1328	0.6		1336	0.7
				1902	0.8		1411	0.6		1339	0.6		1549	0.6		1556	0.7
				2219	1.1		2136	1.1		1639	0.8		2058	1.1		1904	0.5
										1949	0.6						
04	0132	0.5	19	0534	0.6	04	0124	0.8	19	0045	1.1	04	0009	0.8	19	0106	1.1
	0928	1.1		0915	0.9		0339	0.8		0756	0.6		0308	1.0		0741	0.6
	1354	0.7		1258	0.5		0706	0.6		1158	0.9		0706	0.5		1153	0.9
	2124	1.0		1636	0.9		1109	1.0		2000	0.4		1104	0.9		1917	0.4
				1939	0.7		1758	0.5					1743	0.5			
				2332	1.1		2253	1.1					2221	1.1			
05	0523	0.6	20	0653	0.6	05	0756	0.5	20	0126	1.3	05	0100	1.0	20	0109	1.3
	1036	1.1		1032	0.9		1224	1.1		0802	0.6		0309	1.1		0738	0.5
	1700	0.6		1408	0.6		1849	0.3		1302	1.1		0747	0.4		1247	1.1
	2226	1.1		1706	0.8					2000	0.3		1223	1.1		1928	0.3
				2002	0.6								1834	0.2			
													2356	1.2			
06	0645	0.6	21	0034	1.2	06	0004	1.2	21	0200	1.4	06	0817	0.3	21	0138	1.4
	1139	1.1		0741	0.6		0839	0.4		0754	0.5		1315	1.2		0726	0.4
	1802	0.5		1158	0.9		1324	1.2		1349	1.2		1917	0.0		1323	1.2
	2324	1.2		2019	0.5		1934	0.1		2006	0.2					1939	0.2
07	0747	0.5	22	0123	1.3	07	0109	1.4	22	0232	1.5	07	0104	1.4	22	0206	1.5
	1239	1.2		0804	0.6		0919	0.4		0800	0.4		0856	0.3		0736	0.3
	1849	0.3		1304	1.1		1415	1.3		1424	1.3		1358	1.4		1400	1.3
				2017	0.4		2015	0.0		2023	0.1		2000	-0.1		2000	0.1
08	0023	1.3	23	0206	1.4	08	0204	1.5	23	0304	1.5	08	0153	1.5	23	0238	1.6
	0839	0.5		0804	0.6		1000	0.4		0819	0.3		0928	0.3		0758	0.2
	1332	1.2		1358	1.2		1500	1.4		1458	1.4		1439	1.5		1432	1.4
	1932	0.2		2006	0.3		2058	-0.1		2045	0.1		2045	-0.2		2021	0.1
09	0117	1.4	24	0249	1.4	09	0254	1.6	24	0338	1.6	09	0234	1.6	24	0306	1.6
	0928	0.5		0811	0.5		1039	0.4		0849	0.2		0954	0.4		0821	0.1
	1421	1.3		1441	1.2		1543	1.4		1530	1.4		1517	1.5		1502	1.5
	2015	0.1		2024	0.2		2141	-0.2		2109	0.1		2121	-0.2		2041	0.1
10	0211	1.4	25	0323	1.5	10	0338	1.6	25	0408	1.6	10	0313	1.6	25	0338	1.6
	1015	0.5		0836	0.4		1051	0.6		0913	0.2		0830	0.5		0851	0.1
	1509	1.3		1515	1.3		1623	1.5		1558	1.4		1558	1.6		1534	1.5
	2102	0.0		2056	0.1		2219	-0.2		2130	0.1		2158	-0.1		2102	0.1
11	0304	1.5	26	0400	1.5	11	0417	1.6	26	0441	1.5	11	0356	1.6	26	0406	1.5
	1104	0.5		0902	0.3		0856	0.5		0945	0.1		0828	0.4		0915	0.1
	1558	1.3		1551	1.3		1702	1.4		1624	1.4		1639	1.5		1602	1.5
	2149	-0.1		2124	0.1		2254	-0.1		2153	0.1		2221	0.1		2119	0.2
12	0354	1.6	27	0436	1.5	12	0500	1.6	27	0509	1.4	12	0436	1.5	27	0438	1.4
	0902	0.6		0934	0.3		0917	0.4		1009	0.2		0856	0.2		0947	0.1
	1004	0.6		1615	1.3		1747	1.4		1649	1.4		1715	1.4		1634	1.4
	1153	0.6		2154	0.1		2321	0.1		2209	0.2		2232	0.2		2141	0.2

	1645	1.3															
	2234	-0.1															
13	0438	1.6	28	0508	1.5	13	0541	1.4	28	0543	1.3	13	0511	1.3	28	0504	1.3
	0906	0.6		1002	0.3		0953	0.3		1041	0.2		0926	0.2		1013	0.1
	1251	0.7		1641	1.3		1417	1.0		1715	1.3		1800	1.3		1702	1.4
	1728	1.3		2219	0.2		1500	1.0		2232	0.3		2243	0.4		2200	0.3
	2317	0.0					1828	1.3									
							2338	0.3									
14	0519	1.5	29	0543	1.4	14	0619	1.2	29	0613	1.2	14	0554	1.1	29	0538	1.1
	0936	0.5		1034	0.3		1023	0.2		1108	0.3		1002	0.1		1049	0.2
	1306	0.9		1702	1.3		1439	1.1		1749	1.3		1553	1.0		1741	1.3
	1419	0.9		2247	0.2		1651	1.0		2256	0.4		1849	1.2		2219	0.4
	1813	1.2					1917	1.1					2256	0.6			
							2354	0.5									
15	0002	0.1	30	0615	1.3	15	0700	1.1		15	0217	0.9	30	0243	1.0		
	0602	1.5		1102	0.3		1100	0.2			0406	0.8		0415	0.9		
	1006	0.4		1730	1.2		1509	1.1			0638	1.0		0621	1.0		
	1356	1.0		2308	0.3		1800	0.9			1043	0.2		1121	0.3		
	1558	0.9					2023	1.0			1500	1.0		1824	1.2		
	1904	1.2									1704	0.9		2245	0.5		
											1945	1.0					
											2311	0.7					
			31	0656	1.2								31	0224	1.0		
				1136	0.4									0547	0.8		
				1809	1.2									0751	0.8		
				2338	0.4									1211	0.5		
														1923	1.2		
														2306	0.7		

2024

CANANEIA - BASE SUL DO IOUSP

2024

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

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 0234	1.1	16 0258	1.1	01 0228	1.1	16 0121	0.9	01 0123	0.9	16 0549	0.5
	0619		0704		0634		0254		0324		1104
	0934		1008		1041		0649		0713		1643
	1553		1741		1630		1038		1138		
	2034		2323		2121		1624		1749		
	2343						2306		2306		
02 0247	1.1	17 0711	0.6	02 0013	1.0	17 0630	0.6	02 0741	0.5	17 0004	1.2
	0654		1121		0247		1119		1219		0608
	1104		1806		0702		1721		1849		1147
	1708				1128						1836
	2156				1726						
					2243						
03 0017	1.0	18 0024	1.2	03 0732	0.4	18 0008	1.3	03 0019	1.2	18 0056	1.3
	0253		0702		1209		0621		0754		0639
	0721		1208		1819		1158		1306		1226
	1204		1832				1808		1947		2021
	1802										
	2328										
04 0756	0.3	19 0100	1.3	04 0000	1.3	19 0053	1.3	04 0115	1.2	19 0138	1.3
	1249		0656		0756		0636		0641		0709
	1854		1247		1253		1234		1358		1313
			1900		1909		1843		2036		2109
05 0041	1.4	20 0134	1.5	05 0056	1.4	20 0128	1.4	05 0202	1.3	20 0215	1.3
	0823		0706		0813		0658		0656		0749
	1326		1319		1334		1309		1451		1406
	1939		1926		1958		1919		2102		2151
06 0126	1.5	21 0202	1.5	06 0143	1.4	21 0202	1.4	06 0247	1.3	21 0258	1.3
	0851		0726		0726		0724		0728		0826
	1406		1354		1417		1351		1541		1500
	2021		1949		2041		1941		2058		2223
07 0208	1.6	22 0236	1.5	07 0223	1.4	22 0238	1.4	07 0323	1.2	22 0339	1.3
	0847		0754		0711		0758		0806		0913
	1449		1428		1504		1434		1626		1554
	2100		2009		2109		2006		2108		2102
08 0251	1.5	23 0304	1.5	08 0302	1.3	23 0309	1.4	08 0400	1.2	23 0419	1.2
	0747		0819		0739		0832		0851		1006
	1530		1504		1554		1517		1708		1639
	2130		2028		2113		2026		2138		2115
09 0328	1.5	24 0336	1.4	09 0345	1.3	24 0347	1.3	09 0430	1.1	24 0506	1.2
	0802		0851		0809		0908		0934		1104
	1611		1541		1641		1602		1751		1719
	2145		2051		2119		2054		2206		2145
10 0406	1.4	25 0404	1.3	10 0419	1.2	25 0423	1.2	10 0219	1.1	25 0604	1.1
	0830		0921		0853		0956		1021		1208
	1656		1615		1723		1649		1826		1802
	2151		2109		2143		2115		2243		2209
11 0449	1.2	26 0438	1.2	11 0241	1.0	26 0508	1.1	11 0241	1.1	26 0149	1.0
	0904		0958		0456		1054		1117		0409
	1741		1654		0930		1730		1906		0711
	2202		2134		1804		2149		2313		1309
					2206						1847
											2247
12 0524	1.0	27 0509	1.1	12 0153	1.1	27 0121	0.9	12 0306	1.1	27 0215	1.1
	0945		1039		1013		0345		1232		0517
	1821		1736		1853		0613		1951		0823
	2221		2158		2243		1209		2358		1409
							1813				1928
							2213				2319
13 0156	1.0	28 0154	1.0	13 0215	1.1	28 0141	1.0	13 0338	1.0	28 0254	1.1
	0445		0423		1108		0458		0639		0604
	0602		0608		1938		0749		0817		0924
	1021		1134		2315		1336		1349		1509
	1909		1819				1900		2043		2013

	2251	0.7		2223	0.6			2253	0.7								
14	0215	1.1	29	0158	1.0	14	0251	1.1	29	0204	1.1	14	0053	0.7	29	0000	0.6
	0602	0.8		0526	0.7		0636	0.8		0543	0.7		0358	0.9		0324	1.0
	0700	0.8		0756	0.8		0802	0.8		0904	1.0		0619	0.8		0645	0.7
	1106	0.4		1326	0.4		1236	0.5		1447	0.2		0930	0.9		1019	1.1
	1521	0.8		1911	1.3		2034	1.1		1954	1.3		1453	0.5		1615	0.4
	1624	0.8		2256	0.7					2328	0.7		2149	1.1		2108	1.1
	2009	1.0															
	2315	0.8															
15	0247	1.1	30	0208	1.1	15	0002	0.8	30	0236	1.1	15	0554	0.7	30	0054	0.6
	0645	0.7		0602	0.6		0306	1.0		0613	0.6		1019	1.0		0400	0.9
	0838	0.7		0932	0.9		0651	0.7		1004	1.0		1549	0.5		0709	0.6
	1206	0.5		1519	0.4		0936	0.8		1549	0.2		2300	1.1		1109	1.2
	1541	0.7		2011	1.2		1511	0.5		2051	1.3					1732	0.5
	1706	0.7		2328	0.8		2147	1.1								2219	1.0
	2138	1.0															
	2356	0.9															
										31	0013	0.8					
											0302	1.0					
											0649	0.5					
											1054	1.2					
											1649	0.2					
											2154	1.2					

2024

CANANEIA - BASE SUL DO IOUSP

2024

LATITUDE 25 1.0 S			LONGITUDE 47 55.5 W			FUSO + 3 HORAS											
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703					
JULHO						AGOSTO						SETEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M
01	0204	0.7	16	0558	0.5	01	0058	1.0	16	0117	1.2	01	0208	1.3	16	0215	1.5
	0432	0.8		1104	1.1		0802	0.3		0708	0.1		0800	0.1		0809	-0.2
	0741	0.6		1653	0.7		1351	1.3		1241	1.3		1453	1.5		1408	1.6
	1202	1.2		1956	0.6		2054	0.6		2106	0.4		2009	0.4		2138	0.4
	1856	0.5															
	2351	1.0															
02	0758	0.5	17	0028	1.1	02	0149	1.2	17	0200	1.3	02	0241	1.4	17	0253	1.6
	1256	1.3		0634	0.3		0800	0.2		0749	-0.1		0819	0.1		0851	-0.2
	2008	0.6		1158	1.2		1436	1.4		1339	1.4		1526	1.5		1454	1.6
				2047	0.6		2039	0.6		2143	0.4		2036	0.2		2132	0.4
03	0100	1.1	18	0123	1.2	03	0224	1.3	18	0239	1.4	03	0306	1.5	18	0326	1.6
	0749	0.4		0709	0.1		0811	0.2		0828	-0.2		0841	0.1		0926	-0.2
	1351	1.3		1253	1.3		1515	1.4		1432	1.5		1600	1.6		1538	1.6
	2054	0.6		2124	0.5		2038	0.5		2211	0.4		2102	0.2		2030	0.4
04	0153	1.2	19	0208	1.3	04	0258	1.3	19	0315	1.5	04	0334	1.5	19	0404	1.6
	0719	0.3		0753	0.0		0834	0.1		0908	-0.2		0904	0.1		0958	0.0
	1443	1.4		1353	1.4		1554	1.5		1517	1.6		1636	1.5		1615	1.5
	2106	0.6		2202	0.5		2058	0.4		2228	0.5		2132	0.1		2049	0.3
05	0236	1.2	20	0251	1.4	05	0328	1.4	20	0354	1.5	05	0356	1.4	20	0445	1.5
	0747	0.2		0834	-0.1		0902	0.1		0951	-0.2		0924	0.1		1013	0.2
	1530	1.4		1451	1.5		1630	1.5		1602	1.6		1704	1.5		1700	1.4
	2054	0.6		2239	0.5		2121	0.3		2108	0.5		2200	0.1		2111	0.2
06	0309	1.3	21	0332	1.4	06	0354	1.4	21	0432	1.5	06	0421	1.4	21	0526	1.3
	0823	0.2		0917	-0.1		0930	0.1		1028	-0.1		0949	0.2		1021	0.4
	1611	1.5		1541	1.5		1704	1.5		1645	1.6		1738	1.4		1741	1.2
	2106	0.5		2258	0.6		2153	0.2		2113	0.4		2224	0.1		2149	0.2
07	0345	1.3	22	0411	1.4	07	0413	1.3	22	0508	1.4	07	0443	1.3	22	0615	1.2
	0902	0.2		1004	-0.1		0958	0.2		1104	0.1		1006	0.3		1036	0.6
	1654	1.5		1623	1.6		1738	1.5		1723	1.5		1806	1.2		1351	0.8
	2134	0.4		2123	0.6		2219	0.2		2141	0.3		2256	0.2		1509	0.8
																1819	1.1
																2221	0.2
08	0409	1.2	23	0454	1.3	08	0428	1.3	23	0554	1.3	08	0515	1.2	23	0238	1.0
	0941	0.2		1054	-0.1		1023	0.2		1126	0.3		1032	0.4		0451	0.9
	1728	1.5		1704	1.6		1808	1.4		1802	1.4		1843	1.1		0721	1.0
	2202	0.4		2136	0.5		2251	0.2		2208	0.2		2321	0.3		1056	0.7
																1402	1.0
																1658	0.8
																1902	0.9
																2300	0.3
09	0424	1.2	24	0539	1.2	09	0438	1.2	24	0232	1.1	09	0606	1.1	24	0300	1.0
	1019	0.2		1141	0.0		1051	0.3		0413	1.0		1058	0.5		0545	0.8
	1802	1.5		1747	1.6		1843	1.3		0651	1.1		1508	0.9		0849	1.0
	2236	0.4		2200	0.4		2315	0.3		1141	0.5		1700	0.9		1113	0.8
										1845	1.2		1928	1.0		1432	1.1
										2245	0.2		2356	0.5		1809	0.7
																2002	0.8
																2341	0.5
10	0336	1.1	25	0221	1.0	10	0509	1.2	25	0254	1.1	10	0723	1.0	25	0315	0.9
	1100	0.3		0632	1.2		1115	0.4		0539	0.9		1124	0.6		0617	0.6
	1839	1.4		1230	0.1		1915	1.2		0800	1.0		1504	1.0		1019	1.0
	2306	0.4		1823	1.5		2351	0.4		1156	0.7		1811	0.8		1153	1.0
				2230	0.4					1434	0.8		2047	0.9		1456	1.1
										1602	0.7					1906	0.7
										1923	1.0					2141	0.8
										2315	0.3						
11	0345	1.1	26	0230	1.1	11	0634	1.1	26	0315	1.1	11	0043	0.6	26	0043	0.6
	1141	0.4		0458	1.0		1151	0.5		0619	0.8		0311	0.7		0315	0.7
	1913	1.3		0736	1.1		2000	1.1		0921	1.0		0847	1.0		0649	0.5
	2343	0.4		1321	0.3					1211	0.8		1200	0.8		1200	1.1
				1904	1.3					1451	0.9		1509	1.0		1304	1.1
				2302	0.3					1753	0.8		1900	0.6		1438	1.1
										2011	0.9		2238	0.9		1941	0.6

						2358	0.4					2336	0.9				
12	0408	1.1	27	0300	1.1	12	0023	0.5	27	0345	1.0	12	0530	0.4	27	0702	0.4
	1221	0.4		0558	0.9		0806	1.0		0656	0.6		1002	1.1		1238	1.2
	1956	1.2		0847	1.0		1221	0.6		1053	1.0		1253	0.9		1951	0.6
				1421	0.5		1602	0.8		1256	1.0		1517	1.0			
				1949	1.1		1756	0.8		1500	1.0		1936	0.5			
				2343	0.4		2106	1.0		1906	0.7						
										2136	0.8						
13	0015	0.5	28	0330	1.1	13	0115	0.6	28	0051	0.6	13	0017	1.0	28	0036	1.1
	0438	0.9		0641	0.8		0400	0.7		0358	0.8		0611	0.2		0709	0.3
	0558	0.9		0954	1.0		0458	0.7		0717	0.5		1119	1.2		1309	1.3
	0800	1.0		1632	0.6		0921	1.0		1209	1.1		2006	0.4		1928	0.5
	1306	0.5		2039	1.0		1304	0.7		1958	0.6						
	2049	1.1					1558	0.9		2341	0.9						
							1904	0.7									
							2247	0.9									
14	0106	0.6	29	0019	0.5	14	0553	0.5	29	0739	0.4	14	0106	1.2	29	0111	1.2
	0911	1.0		0400	1.0		1032	1.1		1302	1.2		0654	0.0		0719	0.2
	1356	0.6		0708	0.6		1400	0.9		2021	0.6		1224	1.3		1347	1.4
	2156	1.0		1058	1.1		1600	0.9					2041	0.4		1921	0.4
				1823	0.7		1956	0.6									
				2149	0.9												
15	0523	0.6	30	0115	0.6	15	0019	1.0	30	0056	1.0	15	0143	1.4	30	0147	1.4
	1009	1.1		0423	0.8		0630	0.3		0747	0.3		0732	-0.2		0734	0.1
	1447	0.7		0739	0.5		1138	1.2		1341	1.3		1319	1.5		1419	1.5
	1704	0.7		1200	1.1		2034	0.5		2019	0.6		2108	0.3		1941	0.3
	1845	0.7		1947	0.7												
	2315	1.1		2334	0.9												
			31	0756	0.4				31	0138	1.2						
				1258	1.2					0749	0.2						
				2034	0.6					1415	1.4						
										2000	0.5						

	1451	1.1		2358	1.1					1956	0.5						
	1906	0.5															
	2349	1.1															
12	0543	0.1	27	0626	0.3	12	0032	1.4	27	0026	1.2	12	0051	1.4	27	0024	1.2
	1051	1.2		1228	1.3		0647	0.0		0638	0.4		0724	0.3		0800	0.5
	1939	0.4		1839	0.5		1213	1.4		1304	1.3		1243	1.2		1317	1.2
							2004	0.5		1839	0.3		2017	0.5		1900	0.2
13	0032	1.2	28	0038	1.2	13	0111	1.5	28	0102	1.3	13	0138	1.4	28	0109	1.3
	0626	0.0		0643	0.3		0732	0.0		0704	0.4		0817	0.4		0843	0.5
	1158	1.4		1306	1.4		1308	1.4		1347	1.4		1339	1.2		1404	1.3
	2006	0.4		1845	0.4		2023	0.5		1911	0.2		2015	0.4		1941	0.1
14	0109	1.4	29	0108	1.3	14	0156	1.5	29	0141	1.4	14	0226	1.5	29	0158	1.4
	0708	-0.2		0704	0.2		0813	0.1		0721	0.4		0856	0.5		0917	0.6
	1253	1.5		1343	1.4		1358	1.4		1423	1.4		1426	1.2		1451	1.3
	2036	0.4		1908	0.2		1917	0.4		1949	0.1		1934	0.3		2021	0.1
15	0147	1.5	30	0141	1.4	15	0239	1.5	30	0217	1.4	15	0313	1.5	30	0245	1.4
	0751	-0.2		0723	0.2		0849	0.3		0739	0.4		0854	0.6		0832	0.6
	1339	1.5		1417	1.5		1447	1.3		1502	1.3		1511	1.2		1534	1.3
	2054	0.4		1939	0.1		1928	0.3		2023	0.1		2013	0.3		2106	0.0
			31	0209	1.5										31	0326	1.5
				0743	0.2											0836	0.6
				1453	1.5											1615	1.3
				2008	0.1											2153	0.0

	0902	0.4		0843	0.4		0939	0.3		0923	0.2		0839	0.3		0815	0.2
	1319	1.0		1404	1.0		1428	1.2		1443	1.2		1336	1.2		1356	1.2
	2102	0.0		2053	-0.1		2204	0.0		2158	-0.2		2102	0.0		2051	-0.2
14	0351	1.1	29	0304	1.2	14	0306	1.1				14	0209	1.1	29	0226	1.1
	0939	0.4		0917	0.3		1002	0.3					0904	0.2		0853	0.2
	1400	1.0		1436	1.1		1504	1.2					1406	1.3		1415	1.3
	2149	0.0		2138	-0.1		2245	0.1					2141	0.0		2134	-0.1
15	0330	1.1	30	0330	1.2	15	0332	1.1		15	0232	1.1	30	0228	1.1		
	1009	0.4		0954	0.3		1030	0.3					0932	0.2		0928	0.2
	1441	1.1		1506	1.1		1541	1.2					1443	1.3		1434	1.3
	2228	0.0		2219	-0.1		2315	0.2					2211	0.1		2213	0.0
			31	0347	1.1										31	0245	1.0
				1028	0.3											1004	0.2
				1532	1.2											1502	1.2
				2302	-0.1											2258	0.2

2025

UBATUBA - BASE NORTE DO IOUSP

2025

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	ALT		DIA	HORA		DIA	ALT		DIA	HORA		DIA	ALT	
	H	M		M	H		M	M		H	M		M	H		M	M
01	0306	1.0	16	0321	1.0	01	0304	1.0	16	0321	1.0	01	0432	0.9	16	0015	0.5
	1049	0.2		1054	0.2		1138	0.2		1128	0.2		1317	0.3		0439	0.9
	1534	1.1		1556	1.1		1604	0.9		1624	1.0		1745	0.8		1300	0.2
	2347	0.4		2309	0.5		1819	0.8		2345	0.6		1924	0.7		1826	0.9
							2041	0.9					2154	0.8			
02	0334	0.9	17	0341	1.0	02	0017	0.7	17	0345	0.9	02	0123	0.7	17	0104	0.5
	1139	0.3		1139	0.3		0341	0.9		1219	0.2		0534	0.9		0523	0.9
	1608	1.0		1626	1.0		1238	0.3		1715	0.9		1417	0.3		1356	0.2
	1913	0.8		2353	0.6		1656	0.8					1847	0.7		2119	0.9
	2056	0.8					1853	0.7					2004	0.7			
							2156	0.8					2238	0.8			
03	0038	0.6	18	0354	0.9	03	0113	0.7	18	0039	0.6	03	0213	0.6	18	0158	0.5
	0400	0.9		1234	0.3		0413	0.9		0404	0.8		0656	0.8		0623	0.8
	1243	0.3		1708	0.9		0949	0.5		1319	0.3		1521	0.4		1454	0.2
	1656	0.8					1347	0.3		2115	0.9		2306	0.8		2234	0.9
	1917	0.7					1756	0.7									
	2226	0.9					1904	0.7									
							2253	0.9									
04	0139	0.7	19	0051	0.7	04	0224	0.8	19	0141	0.6	04	0315	0.6	19	0258	0.5
	0421	0.9		0404	0.8		0500	0.8		0447	0.8		0830	0.8		1017	0.9
	0845	0.5		1339	0.3		1049	0.6		1423	0.3		1624	0.4		1554	0.2
	1054	0.5		1808	0.8		1458	0.3		2217	0.9		2334	0.8		2332	0.9
	1358	0.4		1913	0.8		2326	0.9									
	1751	0.7		2226	0.9												
	1939	0.6															
	2324	0.9															
05	0313	0.8	20	0202	0.7	05	0404	0.7	20	0249	0.6	05	0423	0.5	20	0400	0.5
	0428	0.8		0423	0.8		0709	0.7		0651	0.7		0958	0.9		1136	0.9
	0904	0.5		0758	0.6		1002	0.7		1000	0.8		1723	0.4		1658	0.3
	1138	0.6		0951	0.6		1115	0.7		1530	0.2		2334	0.8			
	1523	0.4		1453	0.3		1608	0.3		2306	1.0						
				2308	1.0		2358	0.9									
06	0006	1.0	21	0454	0.7	06	0509	0.6	21	0353	0.5	06	0523	0.4	21	0023	0.9
	0913	0.6		0736	0.6		1013	0.8		1058	0.9		1104	0.9		0504	0.4
	1204	0.7		1054	0.8		1713	0.3		1632	0.2		1811	0.4		1241	1.0
	1651	0.3		1602	0.3					2354	1.0		2339	0.9		1800	0.3
		2349	1.0														
07	0039	1.0	22	0523	0.6	07	0017	0.9	22	0451	0.5	07	0613	0.3	22	0106	0.9
	0628	0.6		1138	0.9		0547	0.5		1145	1.0		1153	1.0		0609	0.3
	1219	0.8		1706	0.2		1100	0.9		1730	0.1		1856	0.3		1339	1.1
	1754	0.2					1806	0.3								1902	0.3
08	0100	1.0	23	0023	1.1	08	0028	0.9	23	0036	1.0	08	0011	1.0	23	0143	0.8
	0647	0.5		0551	0.5		0621	0.4		0543	0.4		0658	0.2		0708	0.2
	1204	0.9		1211	1.0		1134	1.0		1230	1.1		1232	1.0		1436	1.1
	1841	0.2		1802	0.1		1851	0.2		1823	0.1		1938	0.3		2000	0.4
09	0113	1.0	24	0058	1.1	09	0024	1.0	24	0109	1.0	09	0043	1.0	24	0123	0.8
	0708	0.4		0628	0.4		0653	0.3		0632	0.3		0741	0.1		0802	0.1
	1211	1.0		1247	1.1		1209	1.1		1311	1.1		1313	1.1		1524	1.1
	1921	0.1		1854	0.0		1928	0.2		1915	0.1		2013	0.3		2053	0.4
10	0115	1.0	25	0132	1.1	10	0036	1.0	25	0136	0.9	10	0113	1.0	25	0106	0.9
	0736	0.3		0704	0.3		0728	0.2		0719	0.2		0823	0.1		0854	0.0
	1238	1.1		1315	1.2		1247	1.1		1349	1.1		1353	1.1		1609	1.1
	2000	0.1		1941	-0.1		2004	0.2		2004	0.2		2054	0.4		2138	0.4
11	0113	1.1	26	0151	1.1	11	0104	1.1	26	0109	0.9	11	0149	1.0	26	0141	0.9
	0802	0.2		0745	0.2		0804	0.1		0808	0.1		0904	0.0		0943	0.0
	1309	1.2		1334	1.2		1321	1.2		1430	1.1		1430	1.1		1651	1.1
	2036	0.1		2024	0.0		2041	0.2		2056	0.3		2136	0.4		2215	0.5
12	0134	1.1	27	0141	1.0	12	0136	1.1	27	0113	0.9	12	0221	1.0	27	0219	1.0
	0834	0.2		0824	0.2		0843	0.1		0858	0.1		0949	0.0		1028	0.0
	1345	1.2		1351	1.2		1358	1.2		1515	1.1		1509	1.1		1621	1.0
	2108	0.1		2108	0.1		2113	0.3		2147	0.4		2211	0.5		2254	0.5
13	0202	1.1	28	0149	1.0	13	0204	1.1	28	0147	0.9	13	0256	1.0	28	0304	1.1
	0904	0.1		0906	0.1		0921	0.1		0949	0.1		1034	0.0		1113	0.0

	1415	1.2		1413	1.2		1432	1.2		1456	1.0		1551	1.1		1608	1.0
	2143	0.2		2156	0.2		2149	0.4		2232	0.5		2253	0.5		2326	0.5
14	0232	1.1	29	0206	1.0	14	0234	1.1	29	0217	1.0	14	0328	1.0	29	0351	1.1
	0939	0.2		0953	0.1		1000	0.1		1039	0.1		1117	0.1		1200	0.1
	1451	1.2		1447	1.1		1508	1.1		1528	1.0		1632	1.0		1639	0.9
	2211	0.3		2243	0.4		2223	0.5		1704	0.9		2334	0.5		2356	0.5
										1828	1.0						
										2313	0.6						
15	0300	1.1	30	0238	1.0	15	0300	1.0	30	0300	1.0	15	0404	0.9	30	0436	1.0
	1015	0.2		1043	0.2		1043	0.1		1130	0.1		1206	0.1		1251	0.2
	1521	1.1		1521	1.0		1547	1.1		1609	0.9		1721	1.0		1713	0.9
	2243	0.4		2330	0.5		2258	0.5		1800	0.9						
										1949	0.9						
									31	0000	0.6						
										0345	1.0						
										1223	0.2						
										1656	0.8						
										1849	0.8						
										2056	0.8						

1621	1.1	1609	1.0	1636	1.0	1639	1.0	0756	0.7	0902	0.7						
2308	0.4	2313	0.4	2353	0.4			0947	0.8	1011	0.7						
								1319	0.6	1249	0.7						
								1643	0.8	1617	0.9						
								2041	0.5								
								2228	0.5								
14	0408	1.1	29	0417	1.2	14	0439	1.1	29	0002	0.4	14	0132	0.4	29	0138	0.4
	1149	0.0		1209	0.2		1253	0.3		0500	1.0		0528	0.8		0556	0.8
	1653	1.0		1645	0.9		1702	0.9		1239	0.5		0754	0.7		0806	0.7
	2347	0.4		2349	0.4					1700	0.9		1106	0.9		1108	0.8
													1439	0.7		1358	0.7
													1658	0.8		1628	0.8
													2054	0.5		2109	0.6
													2334	0.6			
15	0438	1.0	30	0456	1.1	15	0039	0.4	30	0058	0.4	15	0258	0.4	30	0251	0.4
	1236	0.1		1253	0.4		0508	1.0		0532	0.9		0756	0.6		1145	0.9
	1723	0.9		1713	0.9		1347	0.4		0949	0.7		1202	1.0		1641	0.7
							1726	0.8		1058	0.7		2106	0.5		2002	0.6
							2100	0.6		1321	0.6					2315	0.7
							2211	0.6		1708	0.8						
			31	0034	0.4				31	0202	0.4						
				0534	1.0					0615	0.8						
				1332	0.5					0902	0.7						
				1753	0.8					1154	0.8						
										1424	0.7						
										1713	0.8						
										2147	0.6						
										2304	0.6						

1054	1.0	1000	0.8	2049	0.8	2215	0.8	1547	0.5	2258	0.9
1426	0.8	1338	0.7					2102	0.8		
1624	0.8	1609	0.8								
2047	0.5										
2302	0.6										
14 0251	0.4	29 0221	0.3	14 0449	0.3	29 0358	0.2	14 0500	0.4	29 0417	0.3
1141	1.0	1051	0.9	1206	0.9	1121	1.0	1138	0.8	1154	0.9
2100	0.6	1456	0.7	1711	0.5	1609	0.5	1654	0.4	1628	0.4
2345	0.7	1651	0.7	2223	0.9	2311	0.9	2224	0.9		
		1921	0.6								
		2217	0.7								
15 0409	0.3	30 0334	0.3	15 0545	0.3	30 0458	0.2	15 0554	0.4	30 0013	1.0
1213	1.0	1123	1.0	1224	0.9	1204	1.0	1117	0.8	0524	0.3
1808	0.6	1613	0.6	1754	0.4	1708	0.4	1754	0.3	1245	0.9
		2308	0.8	2309	1.0			2332	0.9	1739	0.3
		31 0439	0.2							31 0115	1.0
		1200	1.0							0634	0.4
		1715	0.5							1326	0.9
		2350	1.0							1843	0.2

1439	1.2		1509	1.3		1506	1.5		1541	1.5		1415	1.5		1451	1.5	
2053	0.1		2024	-0.1		2153	0.0		2139	-0.2		2047	0.0		2034	-0.2	
14	0419	1.4	29	0326	1.5	14	0402	1.4				14	0308	1.4	29	0241	1.5
	0902	0.4		0930	0.4		0943	0.2					0845	0.1		0849	0.2
	1500	1.2		1538	1.3		1534	1.5					1445	1.5		1521	1.5
	2136	0.0		2111	-0.2		2232	0.1					2121	0.1		2117	-0.1
15	0438	1.4	30	0354	1.5	15	0417	1.4				15	0321	1.4	30	0302	1.4
	0934	0.4		0941	0.4		1013	0.2					0915	0.1		0909	0.2
	1523	1.3		1606	1.3		1600	1.5					1508	1.6		1536	1.5
	2221	0.0		2202	-0.2		2308	0.2					2156	0.1		2200	0.0
			31	0421	1.5										31	0323	1.3
				1002	0.4											0934	0.2
				1621	1.3											1556	1.4
				2251	-0.1											2241	0.2

2025			PORTO DE SANTOS - TORRE GRANDE									2025					
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		DIA	HORA		DIA	HORA		DIA	HORA		DIA	HORA				
	H	M		H	M		H	M		H	M		H	M	H	M	
01	0347	1.2	16	0339	1.2	01	0326	1.1	16	0330	1.1	01	0358	1.0	16	0356	1.0
	1000	0.3		1043	0.2		1124	0.3		1123	0.2		1323	0.3		1258	0.1
	1611	1.2		1626	1.4		1713	1.0		1708	1.3		1921	1.0		1841	1.2
	2321	0.5		2132	0.5		1804	1.0		2223	0.6					2339	0.7
							1951	1.0									
02	0402	1.1	17	0358	1.2	02	0330	1.0	17	0345	1.0	02	0032	0.8	17	0353	0.9
	1026	0.4		1138	0.3		0819	0.5		1221	0.2		0432	1.0		0626	0.9
	1638	1.1		1704	1.3		0938	0.5		1758	1.2		1409	0.3		0900	0.9
				2151	0.6		1241	0.4		2254	0.7		2006	0.9		1351	0.2
							2136	1.0								1930	1.2
03	0006	0.7	18	0406	1.0	03	0023	0.9	18	0341	1.0	03	0149	0.8	18	0021	0.7
	0408	1.0		1239	0.4		0321	1.0		0715	0.8		0830	0.9		0356	0.9
	0900	0.4		1751	1.2		0823	0.6		0847	0.8		1500	0.4		0624	0.8
	1153	0.5		2208	0.7		1017	0.7		1317	0.3		2130	0.9		1000	1.0
	1702	0.9					1349	0.4		1856	1.1					1443	0.2
	1926	0.8					2300	1.0		2343	0.8					2024	1.1
2228	1.0																
04	0108	0.9	19	0358	0.9	04	0158	0.9	19	0313	0.9	04	0334	0.7	19	0128	0.7
	0356	1.0		0809	0.7		0306	0.9		0653	0.7		1002	1.0		0402	0.8
	0858	0.5		0943	0.7		0819	0.7		0953	0.9		1551	0.4		0641	0.7
	1123	0.6		1339	0.4		1051	0.8		1413	0.2		2324	1.0		1051	1.1
	1347	0.5		1849	1.0		1449	0.4		2009	1.1					1539	0.3
	1739	0.8		2219	0.8		2354	1.0								2126	1.0
	1930	0.7															
2353	1.1																
05	0853	0.6	20	0251	0.9	05	0656	0.7	20	0123	0.9	05	0453	0.5	20	0654	0.6
	1151	0.7		0726	0.7		1102	0.9		0258	0.9		1051	1.1		1145	1.2
	1509	0.5		1041	0.8		1547	0.4		0647	0.6		1645	0.5		1641	0.3
				1439	0.4					1039	1.0					2239	1.0
				2058	1.0					1509	0.2						
06	0036	1.2	21	0015	1.0	06	0019	1.1	21	0658	0.6	06	0015	1.1	21	0700	0.5
	0751	0.7		0711	0.6		0615	0.7		1119	1.2		0539	0.4		1245	1.3
	1202	0.9		1119	1.0		1113	1.0		1609	0.2		1134	1.2		1749	0.4
	1634	0.4		1543	0.3		1645	0.4		2253	1.1		1751	0.5		2354	1.0
	07	0102		1.2	22		0017	1.1		07	0041		1.1	22		0709	0.5
0717	0.6	0719	0.5	0602		0.5	1200	1.3	0617		0.3	1354	1.3				
1215	1.0	1158	1.1	1138		1.2	1711	0.2	1215		1.2	1856	0.4				
1739	0.3	1645	0.2	1741		0.3	2347	1.2	1900		0.5						
08	0126	1.3	23	0036		1.2	08	0058	1.2		23	0723	0.4		08	0130	1.2
0653	0.5	0739		0.4	0619	0.4		1245	1.4	0653		0.2	0719	0.3			
1228	1.2	1236		1.3	1206	1.3		1811	0.1	1300		1.3	1458	1.4			
1828	0.2	1745		0.1	1834	0.3				1954		0.4	1953	0.4			
09	0145	1.3		24	0054	1.3		09	0119	1.3		24	0028	1.2		09	0200
0658	0.4	0753	0.4		0649	0.2	0726		0.4	0726	0.1		0758	0.2			
1251	1.3	1313	1.4		1243	1.4	1336		1.4	1345	1.3		1553	1.4			
1908	0.2	1839	0.0		1919	0.3	1908		0.1	2036	0.4		2038	0.4			
10	0158	1.4	25		0119	1.4	10		0143	1.3	25		0106	1.2	10		0228
0717	0.2	0756		0.3	0717	0.1		0732	0.3	0802		0.1	0839	0.1			
1315	1.4	1349		1.5	1317	1.4		1436	1.4	1428		1.4	1638	1.5			
1945	0.1	1926		-0.1	2000	0.3		1958	0.2	2108		0.4	2115	0.5			
11	0213	1.4		26	0139	1.4		11	0206	1.3		26	0139	1.2		11	0247
0747	0.1	0804	0.3		0753	0.1	0802		0.2	0838	0.0		0928	0.1			
1347	1.5	1430	1.5		1356	1.5	1538		1.4	1509	1.4		1711	1.4			
2021	0.1	2013	-0.1		2038	0.3	2043		0.3	2136	0.5		2149	0.5			
12	0230	1.4	27		0204	1.3	12		0226	1.3	27		0206	1.1	12		0300
0815	0.1	0819		0.2	0823	0.1		0841	0.2	0919		0.0	1021	0.1			
1415	1.5	1513		1.5	1432	1.5		1636	1.4	1553		1.4	1739	1.3			
2054	0.2	2058		0.0	2111	0.4		2123	0.4	2156		0.5	2215	0.5			
13	0247	1.4		28	0226	1.3		13	0243	1.3		28	0236	1.1		13	0311
0851	0.1	0849	0.2		0900	0.1	0928		0.2	1009	0.1		1113	0.1			
1449	1.6	1538	1.4		1508	1.5	1728		1.3	1632	1.4		1751	1.2			

	2128	0.2		2138	0.2		2136	0.4		2202	0.5		2217	0.5		2251	0.5
14	0304	1.4	29	0253	1.2	14	0258	1.2	29	0300	1.1	14	0326	1.1	29	0402	1.2
	0923	0.1		0924	0.2		0939	0.1		1028	0.2		1106	0.1		1202	0.2
	1519	1.5		1619	1.3		1549	1.4		1811	1.2		1711	1.4		1758	1.2
	2147	0.3		2217	0.4		2145	0.5		2239	0.6		2238	0.6		2317	0.5
15	0319	1.3	30	0309	1.1	15	0311	1.2	30	0319	1.1	15	0349	1.1	30	0436	1.2
	1000	0.1		1015	0.3		1026	0.2		1134	0.2		1202	0.1		1253	0.2
	1554	1.5		1636	1.2		1624	1.4		1847	1.1		1756	1.3		1815	1.1
	2136	0.4		2258	0.6		2202	0.6		2309	0.7		2306	0.6		2355	0.5
									31	0339	1.0						
										1232	0.3						
										1909	1.1						
										2352	0.7						

									1704	1.0							
									2154	0.5							
14	0406	1.2	29	0426	1.4	14	0436	1.2	29	0509	1.3	14	0451	0.9	29	0141	0.5
	1138	0.0		1208	0.3		1251	0.3		0945	0.6		0743	0.7		0619	1.0
	1732	1.4		1726	1.2		1751	1.1		1247	0.6		1128	1.0		0949	0.8
	2253	0.5		2326	0.4		2308	0.4		1719	1.1		1451	0.9		1300	0.9
													1641	0.9		1556	0.9
													2147	0.6		2021	0.7
																2302	0.8
15	0421	1.1	30	0458	1.3	15	0445	1.0	30	0045	0.4	15	0034	0.7	30	0251	0.5
	1230	0.1		1254	0.4		0800	0.9		0551	1.1		0226	0.6		0800	0.9
	1804	1.3		1751	1.1		0924	0.9		0958	0.6		0456	0.7		0915	0.9
	2315	0.5					1347	0.5		1349	0.7		0728	0.6		1253	1.0
							1813	1.0		1739	1.0		1228	1.2		1947	0.6
							2306	0.5					2104	0.6		2350	0.9
			31	0004	0.4				31	0200	0.5						
				0536	1.2					0638	1.0						
				1338	0.5					1002	0.7						
				1811	1.1					1256	0.9						
										1504	0.8						
										1732	0.9						
										2113	0.7						
										2350	0.8						

2025

PORTO DE SANTOS - TORRE GRANDE

2025

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	HORA	ALT	
DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M
01	0358	0.4	16	0008	1.0	01	0013	1.2	16	0613	0.3	01	0026	1.3
	1251	1.1		0534	0.3		0521	0.1		1258	1.2		0545	0.2
	1939	0.5		1308	1.3		1219	1.3		1824	0.3		1154	1.2
				1900	0.6		1939	0.4					1902	0.4
02	0021	1.1	17	0021	1.1	02	0053	1.4	17	0023	1.3	02	0119	1.4
	0504	0.3		0615	0.2		0615	0.0		0658	0.3		0639	0.2
	1258	1.2		1328	1.3		1243	1.3		1324	1.2		1234	1.2
	1953	0.5		1849	0.4		1945	0.4		1900	0.2		1911	0.3
03	0056	1.2	18	0038	1.3	03	0132	1.5	18	0100	1.4	03	0215	1.4
	0558	0.1		0651	0.2		0702	0.0		0738	0.3		0730	0.2
	1313	1.3		1343	1.3		1311	1.4		1353	1.3		1311	1.2
	2004	0.4		1904	0.3		1945	0.3		1934	0.1		1943	0.2
04	0128	1.4	19	0100	1.4	04	0211	1.5	19	0139	1.4	04	0313	1.5
	0643	0.0		0723	0.1		0747	0.0		0813	0.3		0817	0.2
	1334	1.4		1358	1.3		1339	1.3		1417	1.3		1351	1.1
	2021	0.3		1928	0.2		2004	0.2		2011	0.1		2024	0.2
05	0200	1.5	20	0128	1.5	05	0247	1.5	20	0213	1.4	05	0409	1.4
	0724	-0.2		0758	0.1		0828	0.0		0849	0.4		0902	0.3
	1354	1.5		1415	1.3		1406	1.3		1438	1.3		1419	1.1
	2030	0.3		2000	0.1		2034	0.2		2051	0.1		2113	0.1
06	0232	1.6	21	0158	1.5	06	0332	1.5	21	0254	1.5	06	0500	1.4
	0808	-0.2		0832	0.2		0911	0.2		0919	0.4		0943	0.5
	1415	1.5		1434	1.3		1434	1.2		1454	1.2		1453	1.1
	2036	0.2		2036	0.1		2113	0.2		2130	0.1		2209	0.1
07	0258	1.6	22	0230	1.5	07	0423	1.4	22	0330	1.4	07	0551	1.3
	0849	-0.2		0902	0.3		0954	0.4		0938	0.5		1017	0.6
	1441	1.4		1451	1.3		1500	1.1		1508	1.2		1515	1.1
	2056	0.2		2109	0.1		2202	0.2		2217	0.1		2306	0.2
08	0321	1.5	23	0302	1.5	08	0528	1.2	23	0408	1.4	08	0636	1.2
	0930	0.0		0932	0.3		1036	0.6		0945	0.6		1056	0.7
	1504	1.3		1508	1.3		1517	1.1		1523	1.1		1547	1.0
	2123	0.2		2151	0.1		2302	0.3		2308	0.2			
09	0339	1.4	24	0336	1.5	09	0706	1.1	24	0451	1.3	09	0004	0.2
	1011	0.2		0932	0.5		1113	0.7		1009	0.6		0708	1.1
	1528	1.2		1523	1.2		1532	1.0		1543	1.0		1128	0.7
	2156	0.2		2232	0.2								1609	1.0
10	0400	1.3	25	0408	1.4	10	0008	0.3	25	0002	0.2	10	0058	0.3
	1056	0.4		0911	0.5		0849	1.0		0534	1.2		0732	1.0
	1553	1.1		1545	1.1		1202	0.9		1036	0.7		1208	0.7
	2234	0.3		2323	0.3		1521	1.0		1553	1.0		1651	1.0
							2011	0.6						
							2138	0.7						
11	0419	1.1	26	0449	1.3	11	0113	0.4	26	0058	0.3	11	0151	0.3
	1145	0.7		0921	0.6		1011	1.0		0626	1.1		0800	0.9
	1602	1.0		1558	1.1		1311	0.9		1128	0.8		1304	0.7
	2336	0.4					1502	0.9		1541	0.9		1828	0.9
							2011	0.7		1847	0.8			
							2217	0.8		2106	0.9			
12	0447	0.9	27	0019	0.3	12	0219	0.4	27	0153	0.3	12	0239	0.4
	0700	0.9		0528	1.2		1115	1.0		0738	1.1		0858	0.9
	0949	1.0		0945	0.7		1858	0.8		1253	0.8		1434	0.7
	1249	0.9		1600	1.0		2247	0.9		1528	0.9		2104	1.0
	1556	1.0								1834	0.7			
	2053	0.5								2204	1.0			
	2253	0.6												
13	0104	0.5	28	0117	0.4	13	0323	0.4	28	0249	0.2	13	0328	0.4
	0508	0.8		0623	1.0		1156	1.1		0858	1.1		1030	0.9
	0658	0.7		1004	0.8		1808	0.7		1843	0.7		1558	0.6
	1113	1.1		1521	0.9		2302	1.0		2254	1.1		2215	1.0
	2047	0.6		1924	0.7									
	2323	0.7		2206	0.8									
14	0245	0.5	29	0217	0.4	14	0426	0.4	29	0345	0.2	14	0428	0.5
	1206	1.2		0802	1.0		1217	1.1		1008	1.1		1143	1.0

2025

CANANEIA - BASE SUL DO IOUSP

2025

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			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0406	1.5	16	0504	1.5	01	0511	1.6	16	0547	1.4	01	0408	1.6	16	0441	1.4
	0900	0.5		0943	0.3		0945	0.3		1030	0.2		0856	0.3		0938	0.1
	1658	1.3		1649	1.3		1758	1.3		1708	1.3		1654	1.5		1626	1.4
	2239	0.0		2215	0.2		2343	0.1		2230	0.3		2238	0.0		2139	0.2
02	0453	1.6	17	0543	1.4	02	0554	1.5	17	0621	1.2	02	0451	1.5	17	0509	1.3
	0926	0.5		1011	0.3		1009	0.3		1102	0.2		0915	0.2		1006	0.1
	1743	1.2		1708	1.2		1841	1.2		1738	1.2		1732	1.4		1654	1.4
	2326	0.0		2243	0.2					2254	0.3		2300	0.2		2158	0.3
03	0534	1.5	18	0617	1.3	03	0015	0.3	18	0700	1.1	03	0530	1.4	18	0543	1.2
	0958	0.5		1051	0.3		0638	1.3		1138	0.3		0951	0.2		1041	0.2
	1828	1.2		1723	1.2		1047	0.3		1821	1.2		1811	1.3		1728	1.3
				2308	0.3		1506	1.1		2313	0.5		2309	0.4		2215	0.3
							1700	1.0									
							1936	1.1									
04	0017	0.1	19	0658	1.2	04	0041	0.5	19	0323	0.9	04	0609	1.2	19	0617	1.0
	0613	1.5		1124	0.3		0721	1.1		0504	0.9		1019	0.2		1111	0.3
	1030	0.5		1728	1.1		1119	0.3		0754	1.0		1456	1.0		1806	1.2
	1438	1.0		2338	0.4		1526	1.1		1213	0.4		1606	1.0		2241	0.4
	1609	1.0					1804	0.9		1921	1.1		1902	1.2			
	1919	1.1					2047	1.0		2345	0.6		2315	0.6			
05	0115	0.2	20	0743	1.1	05	0100	0.7	20	0317	0.9	05	0213	0.8	20	0245	1.0
	0700	1.4		1204	0.4		0215	0.7		0617	0.8		0400	0.8		0547	0.9
	1104	0.5		1843	1.1		0451	0.7		0904	0.9		0700	1.0		0711	0.9
	1502	1.0					0813	1.0		1306	0.6		1058	0.3		1154	0.4
	1723	0.9					1200	0.4		2038	1.0		1508	1.0		1858	1.2
	2017	1.1					1554	1.0					1730	0.9		2304	0.6
							1853	0.8					2008	1.0			
							2209	1.0					2326	0.8			
06	0226	0.3	21	0006	0.5	06	0109	0.9	21	0011	0.7	06	0221	1.0	21	0251	1.1
	0751	1.2		0838	1.0		0217	0.9		0326	1.0		0547	0.7		0623	0.7
	1147	0.5		1253	0.5		0617	0.6		0702	0.6		0758	0.8		0851	0.8
	1532	1.0		2011	1.0		0923	0.8		1034	0.9		1138	0.4		1256	0.5
	1811	0.9					1249	0.5		1702	0.6		1528	0.9		2000	1.1
	2124	1.1					1611	0.9		2158	1.0		1817	0.7		2336	0.7
							1919	0.6					2154	1.0			
													2338	0.9			
07	0400	0.4	22	0047	0.6	07	0000	1.1	22	0058	0.9	07	0243	1.1	22	0258	1.1
	0847	1.1		0400	0.8		0723	0.6		0334	1.0		0651	0.6		0656	0.6
	1228	0.5		0558	0.7		1056	0.8		0739	0.5		0917	0.7		1023	0.9
	1602	1.0		0945	1.0		1400	0.7		1156	1.0		1221	0.5		1634	0.5
	1856	0.8		1400	0.6		1621	0.8		1804	0.4		1549	0.8		2113	1.1
	2236	1.1		2132	1.0		1953	0.5		2321	1.1		1858	0.6			
08	0534	0.5	23	0136	0.7	08	0115	1.2	23	0808	0.5	08	0249	1.2	23	0006	0.9
	0951	1.0		0356	0.8		0808	0.5		1256	1.1		0730	0.5		0304	1.1
	1321	0.6		0658	0.7		1223	0.9		1851	0.2		1102	0.8		0715	0.5
	1634	0.9		1058	1.0		2011	0.4					1400	0.7		1141	1.0
	1924	0.7		1713	0.6								1532	0.7		1738	0.3
	2345	1.2		2245	1.1								1924	0.4		2247	1.1
09	0653	0.5	24	0745	0.6	09	0153	1.3	24	0036	1.3	09	0139	1.2	24	0108	1.1
	1102	1.0		1206	1.1		0841	0.5		0839	0.4		0800	0.5		0253	1.1
	1447	0.7		1813	0.4		1324	1.1		1343	1.3		1221	1.0		0745	0.4
	1656	0.7		2353	1.2		2034	0.3		1932	0.0		1949	0.3		1232	1.1
	1956	0.5														1823	0.1
10	0047	1.2	25	0821	0.5	10	0223	1.4	25	0126	1.4	10	0139	1.3	25	0008	1.3
	0754	0.5		1304	1.2		0843	0.5		0904	0.4		0809	0.5		0806	0.3
	1221	1.0		1900	0.2		1409	1.2		1423	1.4		1311	1.1		1313	1.3
	2023	0.4					2047	0.2		2011	-0.1		2004	0.2		1908	0.0
11	0141	1.3	26	0053	1.3	11	0258	1.5	26	0209	1.5	11	0204	1.4	26	0100	1.5
	0845	0.5		0858	0.5		0823	0.5		0926	0.4		0753	0.5		0830	0.3
	1326	1.1		1356	1.3		1451	1.3		1502	1.5		1353	1.3		1353	1.4
	2047	0.3		1943	0.1		2058	0.1		2053	-0.2		2017	0.2		1953	-0.1
12	0228	1.4	27	0143	1.4	12	0332	1.5	27	0253	1.6	12	0234	1.5	27	0145	1.6
	0915	0.5		0930	0.5		0834	0.4		0924	0.4		0751	0.3		0847	0.3

1417	1.2		1441	1.3		1523	1.4		1541	1.5		1426	1.4		1430	1.5	
2100	0.3		2023	0.0		2115	0.1		2130	-0.2		2028	0.1		2034	-0.2	
13	0309	1.5	28	0228	1.5	13	0404	1.6	28	0330	1.7	13	0304	1.6	28	0223	1.6
	0856	0.6		0954	0.5		0858	0.3		0845	0.4		0808	0.2		0832	0.4
	1502	1.2		1521	1.4		1556	1.4		1615	1.5		1458	1.4		1508	1.6
	2113	0.2		2104	-0.1		2132	0.1		2206	-0.1		2045	0.1		2111	-0.1
14	0353	1.5	29	0309	1.6	14	0439	1.5				14	0338	1.6	29	0304	1.6
	0853	0.5		0943	0.5		0926	0.2					0838	0.1		0809	0.3
	1545	1.3		1602	1.4		1621	1.4					1528	1.5		1551	1.6
	2126	0.2		2147	-0.2		2153	0.1					2102	0.1		2147	0.0
15	0428	1.5	30	0354	1.6	15	0511	1.5				15	0408	1.5	30	0347	1.5
	0909	0.4		0906	0.5		1000	0.1					0906	0.1		0823	0.2
	1615	1.3		1643	1.4		1647	1.4					1558	1.5		1630	1.5
	2151	0.2		2226	-0.1		2209	0.2					2119	0.2		2209	0.2
			31	0434	1.6										31	0424	1.4
				0917	0.4											0853	0.2
				1719	1.4											1711	1.4
				2306	-0.1											2213	0.4

0809	0.0	0736	0.3	0817	0.0	0743	0.2	0926	0.0	0919	0.2
1458	1.5	1523	1.5	1506	1.4	1600	1.5	1615	1.4	1719	1.5
2028	0.2	2134	0.2	2021	0.4	2145	0.6	2104	0.5	2141	0.6
13 0338	1.5	28 0319	1.4	13 0341	1.3	28 0349	1.2	13 0436	1.2	28 0447	1.1
0843	0.0	0758	0.2	0854	0.0	0817	0.2	1017	0.1	1004	0.3
1534	1.5	1609	1.5	1551	1.4	1653	1.5	1658	1.5	1758	1.4
2051	0.3	2143	0.4	2047	0.4	2123	0.7	2132	0.5	2208	0.5
14 0406	1.4	29 0402	1.3	14 0408	1.2	29 0426	1.1	14 0515	1.1	29 0223	1.1
0911	0.0	0826	0.2	0930	0.1	0900	0.2	1115	0.1	0356	1.1
1606	1.5	1700	1.5	1628	1.4	1738	1.4	1738	1.5	0509	1.1
2108	0.3	2141	0.6	2108	0.4	2145	0.7	2202	0.5	1049	0.3
										1838	1.4
										2245	0.4
15 0436	1.3	30 0449	1.1	15 0438	1.1	30 0100	1.0	15 0223	1.0	30 0251	1.1
0949	0.1	0902	0.2	1011	0.2	0254	0.9	0400	1.0	1134	0.4
1643	1.4	1751	1.4	1706	1.4	0506	1.0	0619	1.0	1911	1.3
2128	0.3	2154	0.7	2136	0.5	0949	0.3	1221	0.1	2319	0.4
						1817	1.4	1815	1.5		
						2209	0.6	2234	0.5		
						31 0141	1.1				
						0438	0.9				
						0556	0.9				
						1043	0.4				
						1900	1.3				
						2249	0.6				

2025

CANANEIA - BASE SUL DO IOUSP

2025

LATITUDE 25		1.0 S		LONGITUDE 47 55.5 W		FUSO +		3 HORAS			
IOUSP-BASE SUL			NIVEL MEDIO .80 M			CARTA 1703					
JULHO			AGOSTO			SETEMBRO					
HORA DIA	ALT	HORA DIA	ALT	HORA DIA	ALT	HORA DIA	ALT	HORA DIA	ALT		
H M M		H M M		H M M		H M M		H M M			
01 0319	1.1	16 0304	1.0	01 0019	0.5	16 0326	1.0	01 0515	0.6	16 0053	0.7
1221	0.4	0521	1.0	0456	0.9	0621	0.8	0953	1.0	0300	0.8
1956	1.2	0753	1.0	0558	0.9	0941	1.0	1245	0.9	0658	0.4
		1347	0.2	0800	1.0	1306	0.8	1539	1.0	1345	1.2
		1917	1.4	1224	0.6	1400	0.8	1939	0.6	1951	0.5
		2324	0.4	1619	0.8	1734	0.7	2353	1.0		
				1738	0.8	2041	0.9				
				2102	1.0						
02 0002	0.5	17 0319	1.0	02 0111	0.6	17 0009	0.5	02 0558	0.4	17 0008	0.9
0400	1.0	0602	0.9	0921	1.0	0345	0.9	1102	1.1	0719	0.3
0653	0.9	0858	1.0	1306	0.7	0654	0.6	1354	1.0	1313	1.3
0817	0.9	1456	0.4	1609	0.9	1106	1.1	1538	1.0	2011	0.5
1309	0.5	2004	1.2	1900	0.8	1858	0.6	2006	0.5		
2047	1.1			2228	0.9	2204	0.8				
03 0056	0.6	18 0002	0.5	03 0536	0.6	18 0102	0.7	03 0053	1.1	18 0100	1.1
0438	0.9	0343	1.0	1028	1.0	0347	0.8	0634	0.2	0743	0.2
0636	0.8	0634	0.8	1402	0.8	0715	0.4	1206	1.2	1343	1.4
0926	1.0	1000	1.1	1617	0.9	1230	1.2	2034	0.5	2013	0.5
1400	0.6	1634	0.5	1953	0.7	1956	0.5				
2153	1.0	2102	1.1								
04 0221	0.6	19 0049	0.6	04 0002	1.0	19 0002	0.9	04 0132	1.3	19 0136	1.3
1021	1.0	0400	0.9	0609	0.4	0745	0.3	0708	0.0	0756	0.1
1456	0.7	0700	0.6	1128	1.1	1326	1.3	1300	1.4	1413	1.5
2309	1.1	1102	1.1	2028	0.6	2038	0.5	2058	0.4	1949	0.4
		1811	0.6								
		2215	1.0								
05 0530	0.5	20 0153	0.7	05 0104	1.1	20 0109	1.1	05 0206	1.4	20 0206	1.4
1108	1.1	0408	0.8	0647	0.2	0806	0.2	0745	-0.1	0808	0.1
1558	0.7	0724	0.5	1224	1.2	1406	1.4	1347	1.5	1451	1.5
1708	0.7	1202	1.2	2100	0.5	2102	0.5	2113	0.4	1958	0.3
1943	0.7	1941	0.5								
		2356	1.0								
06 0023	1.1	21 0754	0.4	06 0149	1.3	21 0154	1.2	06 0241	1.5	21 0239	1.5
0609	0.3	1306	1.3	0719	0.0	0826	0.1	0821	-0.2	0817	0.1
1158	1.2	2045	0.5	1319	1.3	1443	1.5	1428	1.6	1524	1.5
2028	0.6			2126	0.5	2054	0.5	2119	0.4	2021	0.2
07 0113	1.2	22 0108	1.1	07 0226	1.4	22 0230	1.3	07 0313	1.5	22 0304	1.5
0647	0.2	0817	0.3	0758	-0.1	0839	0.1	0858	-0.2	0832	0.1
1247	1.2	1408	1.4	1409	1.4	1519	1.5	1509	1.6	1600	1.5
2106	0.6	2128	0.5	2149	0.5	2034	0.4	2056	0.4	2054	0.1
08 0158	1.3	23 0200	1.2	08 0302	1.4	23 0300	1.4	08 0349	1.5	23 0332	1.5
0723	0.1	0843	0.2	0838	-0.1	0853	0.1	0936	-0.2	0853	0.2
1338	1.3	1458	1.4	1458	1.5	1556	1.5	1553	1.6	1636	1.4
2139	0.6	2154	0.5	2153	0.5	2051	0.3	2056	0.3	2123	0.0
09 0238	1.3	24 0245	1.3	09 0339	1.5	24 0332	1.4	09 0419	1.5	24 0358	1.4
0800	0.0	0900	0.2	0915	-0.2	0906	0.1	1008	0.0	0909	0.2
1428	1.4	1543	1.5	1539	1.6	1632	1.5	1632	1.6	1708	1.3
2156	0.6	2121	0.6	2124	0.5	2111	0.2	2111	0.2	2156	0.1
10 0313	1.3	25 0317	1.3	10 0411	1.4	25 0356	1.4	10 0456	1.4	25 0426	1.4
0843	0.0	0915	0.1	0958	-0.2	0923	0.2	1038	0.2	0932	0.3
1515	1.4	1621	1.5	1617	1.6	1704	1.5	1709	1.4	1743	1.2
2139	0.6	2109	0.5	2121	0.4	2145	0.1	2139	0.2	2226	0.1
11 0353	1.3	26 0354	1.3	11 0447	1.4	26 0417	1.4	11 0538	1.3	26 0458	1.3
0924	-0.1	0930	0.2	1039	-0.1	0945	0.2	1054	0.4	0956	0.4
1600	1.5	1658	1.5	1658	1.6	1741	1.4	1754	1.3	1815	1.1
2119	0.5	2130	0.4	2139	0.3	2213	0.1	2206	0.2	2300	0.2
12 0428	1.3	27 0419	1.3	12 0519	1.3	27 0436	1.3	12 0630	1.2	27 0543	1.2
1013	0.0	0954	0.2	1119	0.0	1004	0.3	1102	0.6	1017	0.5
1643	1.6	1736	1.5	1738	1.6	1811	1.3	1447	0.7	1428	1.0
2132	0.5	2200	0.3	2202	0.3	2249	0.2	1839	1.1	1702	0.9
								2241	0.2	1858	0.9
										2334	0.4
13 0506	1.2	28 0439	1.2	13 0558	1.2	28 0453	1.2	13 0256	1.0	28 0641	1.1

1104	0.0	1019	0.2	1158	0.2	1028	0.4	0504	0.9	1049	0.6						
1717	1.6	1808	1.4	1811	1.4	1851	1.2	0749	1.0	1439	1.1						
2158	0.4	2232	0.2	2232	0.2	2317	0.3	1109	0.8	1808	0.8						
								1358	0.9	2006	0.8						
								1653	0.7								
								1924	0.9								
								2309	0.3								
14	0551	1.2	29	0417	1.2	14	0311	1.1	29	0538	1.1	14	0302	0.9	29	0019	0.5
	1156	0.0		1049	0.3		0456	1.1		1056	0.5		0556	0.7		0753	1.0
	1758	1.6		1845	1.3		0656	1.1		1515	0.9		0915	1.0		1117	0.7
	2223	0.4		2304	0.3		1234	0.4		1639	0.9		1124	0.9		1454	1.1
							1856	1.3		1930	1.0		1415	1.1		1849	0.7
							2302	0.3		2354	0.4		1806	0.7		2154	0.8
													2036	0.8			
													2353	0.5			
15	0321	1.0	30	0353	1.2	15	0311	1.1	30	0700	1.0	15	0309	0.8	30	0432	0.5
	0645	1.1		1115	0.4		0554	0.9		1123	0.6		0626	0.5		0904	1.0
	1249	0.1		1919	1.2		0811	1.0		1511	1.0		1439	1.1		1200	0.9
	1838	1.5		2343	0.3		1302	0.6		1804	0.8		1906	0.6		1502	1.1
	2256	0.4					1402	0.6		2030	0.9		2213	0.8		1911	0.6
							1532	0.6								2331	1.0
							1943	1.1									
							2338	0.4									
			31	0419	1.1				31	0036	0.5						
				1153	0.5					0828	1.0						
				2002	1.1					1158	0.7						
										1524	1.0						
										1902	0.7						
										2202	0.9						

				2149	0.9												
13	0238	0.8	28	0056	0.5	13	0534	0.5	28	0349	0.2	13	0534	0.6	28	0417	0.3
	0500	0.7		0721	1.1		1021	1.1		0853	1.3		1023	1.1		0909	1.2
	0851	1.0		1102	0.7		1324	0.9		1247	0.8		1430	0.7		1308	0.6
	1102	0.9		1436	1.1		1538	0.9		1511	0.9		2258	1.0		1606	0.8
	1411	1.2		1819	0.7		1909	0.7		1834	0.7					1843	0.7
	1809	0.7		2126	0.9		2258	1.0		2247	1.1					2251	1.1
	2039	0.8															
	2353	0.6															
14	0245	0.7	29	0332	0.4	14	0608	0.4	29	0451	0.2	14	0624	0.6	29	0534	0.3
	0549	0.5		0826	1.1		1124	1.1		0956	1.3		1130	1.1		1015	1.1
	1019	1.0		1151	0.8		1904	0.7		1409	0.8		1639	0.6		1413	0.7
	1145	1.0		1451	1.0		2351	1.1		1517	0.8		2347	1.1		1624	0.8
	1443	1.2		1845	0.6					1854	0.6					1906	0.6
	1900	0.6		2247	1.0					2332	1.2					2349	1.2
	2215	0.8															
15	0619	0.4	30	0439	0.3	15	0632	0.4	30	0547	0.1	15	0658	0.6	30	0645	0.3
	1147	1.1		0938	1.2		1217	1.2		1058	1.3		1226	1.2		1128	1.1
	1930	0.6		1258	0.9		1754	0.5		1913	0.5		1749	0.4		1943	0.5
	2343	1.0		1453	1.0												
				1902	0.6												
				2339	1.1												
			31	0528	0.1										31	0047	1.3
				1045	1.3											0753	0.3
				1921	0.5											1239	1.1
																2015	0.4

FASES DA LUA PARA O ANO DE 2024

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	4	3	39
JAN	11	12	3	JAN	18	3	57	JAN	25	17	56	FEV	2	23	22
FEV	9	22	46	FEV	16	14	50	FEV	24	12	22	MAR	3	15	22
MAR	10	8	30	MAR	17	3	42	MAR	25	6	41	ABR	2	3	9
ABR	8	17	45	ABR	15	18	37	ABR	23	23	24	MAI	1	11	22
MAI	8	2	57	MAI	15	11	18	MAI	23	13	31	MAI	30	17	13
JUN	6	12	32	JUN	14	5	7	JUN	22	0	59	JUN	28	22	0
JUL	5	23	10	JUL	13	22	58	JUL	21	10	28	JUL	28	3	4
AGO	4	11	36	AGO	12	15	45	AGO	19	18	56	AGO	26	9	40
SET	3	2	18	SET	11	6	37	SET	18	3	14	SET	24	19	2
OUT	2	19	4	OUT	10	19	18	OUT	17	12	2	OUT	24	8	12
NOV	1	12	56	NOV	9	6	3	NOV	15	21	50	NOV	23	1	36
DEZ	1	6	28	DEZ	8	15	24	DEZ	15	9	6	DEZ	22	22	25
DEZ	30	22	31												

TEMPO SEGUNDO O TMG

FASES DA LUA PARA O ANO DE 2025

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	6	23	51	JAN	13	22	22	JAN	21	20	36
JAN	29	12	30	FEV	5	7	56	FEV	12	13	48	FEV	20	17	37
FEV	28	0	23	MAR	6	16	18	MAR	14	6	51	MAR	22	11	33
MAR	29	10	24	ABR	5	1	50	ABR	13	0	17	ABR	21	1	38
ABR	27	18	57	MAI	4	13	20	MAI	12	16	44	MAI	20	12	1
MAI	27	2	41	JUN	3	3	14	JUN	11	7	29	JUN	18	19	23
JUN	25	10	31	JUL	2	19	18	JUL	10	20	29	JUL	18	0	46
JUL	24	19	29	AGO	1	12	47	AGO	9	8	4	AGO	16	5	27
AGO	23	6	36	AGO	31	6	45	SET	7	18	36	SET	14	10	53
SET	21	20	26	SET	30	0	20	OUT	7	4	26	OUT	13	18	36
OUT	21	12	51	OUT	29	16	41	NOV	5	13	54	NOV	12	5	49
NOV	20	7	0	NOV	28	7	4	DEZ	4	23	32	DEZ	11	21	3
DEZ	20	1	42	DEZ	27	19	0								

TEMPO SEGUNDO O TMG