

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 $23^{\circ}30,0' S - 45^{\circ}07,3' W$ 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 $23^{\circ}57,0' S - 46^{\circ}18,5' W$, 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 $25^{\circ}01,0' S - 47^{\circ}55,5' W$ 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 preamaras e baixamaras 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 baixamaras e são subtrativas após as preamaras.

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 preamaras

% 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

Referências bibliográficas

- DHN. 2001. Tábuas das marés para 2002. 39^a ed. Diretoria de Hidrografia e Navegação. Rio de Janeiro, A Diretoria. 198 p.
- Franco, A. dos S. 1988. Tides - fundamentals, analysis and prediction. 2nd ed. São Paulo, FCTH. 249p.
- Franco, A. dos S. & Harari, J. 1987. Computer programs for tidal data checking, correction, analysis and prediction by the harmonic method. Relat. int. Inst. oceanogr. Univ. S Paulo, (16):1-65.
- Franco, A. dos S. ; Tavares Jr, W. & Cordaro, P. 1975. A new algorithm of harmonic tidal prediction. In: Congress of the International Association for Hydraulic Research, 16. São Paulo, 1975. Proceedings. (4): 270-277
- Harari, J. & Camargo, R. de 1995. Tides and mean sea level variabilities in Santos (SP), 1944 to 1989. Relat. int. Inst. oceanogr. Univ. S Paulo, (36) :1-15.
- Harari, J. 2021. Tábuas das Marés de Ubatuba, Santos e Cananéia para os anos de 2022 e 2023. Relat. Téc. Inst. oceanogr. Univ. S Paulo, (61):1-27
(em www.io.usp.br).
- Mesquita, A. R. de & Harari, J. 1983. Tides and tide gauges of Cananéia and Ubatuba - Brazil (Lat. 24°). Relat. int. Inst. oceanogr. Univ. S Paulo, (11):1-14.

Mesquita, A. R. & Harari, J. - 2003 - "On the harmonic constants of tides and tidal currents of the South-eastern brazilian shelf" – Continental Shelf Research, vol. 23 (2003), p. 1227 – 1237.

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	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	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		1453	0.4									
				1839	0.9					2102	0.7		1900	0.7									
				2123	0.8					1654	0.4		2021	0.7									
				2313	0.8					2349	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						
				1304	0.7										1915	0.1							
				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	
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	
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
1156	0.5	1143	0.4	0456	0.9			0413	0.9	1211	0.3	
1626	1.0	1647	1.1	0954	0.5	1239	0.5	0953	0.4	1653	1.0	
						1711	1.0		1215	0.4		
						2106	0.7		1654	0.9		
						2200	0.7		2006	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											
DIA	HORA	ALT	HORA	DIA	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	ALT					
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M		H M	M		H M	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																						

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

JULHO

AGOSTO

SETEMBRO

DIA	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	
	H	M	H	M	H	M	H	M	H	M	H	M	
01	0026	0.8	16	0441	0.4	01	0117	0.8	16	0051	0.9	01	0051
	0451	0.5		1221	0.8		0654	0.2		0621	0.2		0804
	1245	0.9		1719	0.5		1417	1.1		1347	1.1		1411
	1753	0.4					1951	0.5		1930	0.5		2032
02	0104	0.8	17	0006	0.8	02	0030	0.8	17	0121	0.9	02	0119
	0600	0.4		0545	0.3		0743	0.1		0715	0.0		0845
	1339	1.0		1306	0.9		1447	1.1		1417	1.2		1411
	1854	0.4		1826	0.5		2026	0.4		2008	0.4		2056
03	0128	0.8	18	0039	0.9	03	0056	1.0	18	0153	1.0	03	0156
	0700	0.2		0641	0.2		0823	0.0		0806	-0.1		0919
	1423	1.0		1347	1.0		1454	1.1		1451	1.2		1428
	1949	0.4		1926	0.4		2058	0.4		2045	0.3		2121
04	0011	0.8	19	0111	0.9	04	0132	1.1	19	0219	1.1	04	0226
	0751	0.1		0734	0.1		0902	0.0		0854	-0.2		0956
	1500	1.1		1423	1.1		1447	1.1		1519	1.2		1456
	2036	0.4		2015	0.4		2128	0.4		2115	0.3		2149
05	0051	0.9	20	0145	1.0	05	0209	1.1	20	0241	1.2	05	0300
	0838	0.0		0821	0.0		0945	0.0		0939	-0.2		1028
	1528	1.1		1458	1.2		1500	1.1		1534	1.2		1521
	2113	0.4		2100	0.4		2154	0.3		2151	0.3		2217
06	0130	1.0	21	0219	1.0	06	0251	1.2	21	0300	1.2	06	0330
	0919	0.0		0908	-0.1		1021	0.0		1021	-0.2		1100
	1523	1.1		1534	1.2		1524	1.1		1532	1.1		1551
	2153	0.4		2143	0.4		2221	0.3		2223	0.3		2253
07	0211	1.1	22	0251	1.0	07	0323	1.2	22	0319	1.2	07	0400
	1000	0.0		0956	-0.1		1058	0.1		1104	-0.1		1132
	1523	1.1		1602	1.2		1556	1.1		1547	1.0		1611
	2224	0.4		2219	0.4		2249	0.3		2256	0.3		2330
08	0258	1.1	23	0319	1.1	08	0400	1.2	23	0349	1.2	08	0424
	1045	0.0		1045	-0.1		1136	0.2		1153	0.1		1158
	1551	1.1		1623	1.1		1623	1.0		1606	0.9		1632
	2254	0.4		2256	0.4		2321	0.4		2334	0.4		1300
													1621
													2047
													2236
09	0339	1.1	24	0347	1.1	09	0430	1.1	24	0413	1.1	09	0015
	1123	0.1		1130	0.0		1208	0.3		1239	0.3		0458
	1621	1.0		1630	1.0		1654	1.0		1634	0.9		1239
	2321	0.5		2332	0.4								1649
													1102
													1402
													1649
													2106
													2323
10	0417	1.1	25	0413	1.1	10	0000	0.4	25	0015	0.4	10	0111
	1204	0.2		1215	0.0		0500	1.0		0454	1.0		0534
	1658	1.0		1654	0.9		1247	0.4		1326	0.5		0921
	2356	0.5					1717	0.9		1700	0.8		1047
										2054	0.5		1338
										1700	0.8		2136
										2249	0.5		
11	0500	1.0	26	0008	0.5	11	0051	0.4	26	0113	0.5	11	0221
	1251	0.3		0445	1.1		0528	0.9		0532	0.9		0624
	1734	0.9		1304	0.2		1326	0.5		0830	0.7		0819
				1717	0.8		1743	0.8		1104	0.8		1228
										1428	0.6		1908
										1730	0.8		0.7
										2111	0.5		2043
										2349	0.6		0.6
12	0039	0.5	27	0053	0.5	12	0149	0.4	27	0239	0.5	12	0341
	0539	1.0		0517	1.0		0606	0.9		0624	0.7		1211
	1336	0.4		1400	0.3		1417	0.6		0839	0.7		2023
	1811	0.8		1754	0.8		1804	0.8		1209	0.9		1256
				2051	0.6					1604	0.7		1849
				2230	0.6					1756	0.7		0.6

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

NOVEMBRO DEZEMBRO

DIA	HORA	ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT				
			DIA	H M		DIA	H M		DIA	H M		DIA	H 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	
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	

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									
JANEIRO				FEVEREIRO								MARCO					
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT		
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA			
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M		
01	0032	0.3	16	0039	0.1	01	0053	0.4	16	0149	0.6	01	0519	1.1	16	0106	0.7
	0558	1.2		0606	1.2		0617	1.1		0553	1.0		1217	0.4		0453	1.0
	1200	0.5		1109	0.6		1253	0.5		1026	0.5		1741	1.2		0934	0.4
	1715	1.1		1700	1.0		1811	1.1		1715	0.9		2317	0.6		1719	0.9
				1832	1.0					2023	0.8					2019	0.8
				2034	1.0					2332	1.0					2343	1.0
02	0109	0.3	17	0128	0.2	02	0138	0.5	17	0253	0.7	02	0539	1.0	17	0219	0.9
	0638	1.1		0638	1.0		0658	1.0		0604	0.9		1321	0.5		0500	1.0
	1247	0.6		1126	0.6		1358	0.6		1038	0.5		1823	1.0		0947	0.5
	1808	1.1		1641	0.9		1911	1.0		1747	0.8		2249	0.8		1213	0.6
				1843	0.9					2006	0.7					1424	0.6
				2149	1.0											1800	0.8
																2013	0.7
03	0151	0.4	18	0221	0.4	03	0239	0.6	18	0039	1.1	03	0006	0.8	18	0034	1.1
	0728	1.0		0704	1.0		0811	0.8		0408	0.8		0156	0.8		0411	0.9
	1349	0.6		1132	0.6		1513	0.6		0617	0.8		0504	0.8		0930	0.7
	1930	1.0		1656	0.9		2104	0.9		1032	0.7		0943	0.7		1221	0.8
				1856	0.8					1302	0.7		1109	0.7		1602	0.5
				2304	1.0					1619	0.6		1445	0.5		1947	0.9
																2200	0.9
04	0230	0.5	19	0317	0.5	04	0411	0.7	19	0123	1.2	04	0038	0.9	19	0104	1.2
	0845	1.0		0743	0.9		0651	0.7		0541	0.7		0745	0.6		0804	0.7
	1502	0.6		1141	0.7		1223	0.9		0658	0.7		1208	0.9		1228	0.9
	2109	1.0		1713	0.7		1632	0.5		0858	0.7		1602	0.4		1730	0.4
				1900	0.7					1306	0.9					1815	0.4
05	0317	0.5	20	0017	1.1	05	0051	1.1	20	0158	1.3	05	0102	1.1	20	0134	1.3
	1039	1.0		0423	0.6		0747	0.6		0641	0.6		0754	0.5		0643	0.6
	1619	0.5		0836	0.8		1308	1.0		1317	1.0		1254	1.0		1243	1.1
	2241	1.0		1154	0.7		1738	0.3		1856	0.3		1715	0.3		1832	0.3
				1304	0.7											1706	0.6
06	0423	0.6	21	0119	1.2	06	0139	1.2	21	0224	1.3	06	0139	1.3	21	0153	1.3
	1217	1.0		0534	0.6		0817	0.5		0715	0.5		0813	0.4		0700	0.4
	1717	0.4		1311	0.8		1353	1.1		1338	1.2		1332	1.2		1302	1.2
				1824	0.5		1830	0.2		1934	0.2		1817	0.1		1915	0.2
07	0000	1.1	22	0206	1.2	07	0217	1.4	22	0247	1.4	07	0206	1.4	22	0208	1.4
	0706	0.5		0634	0.6		0853	0.4		0749	0.4		0841	0.4		0724	0.3
	1306	1.1		1328	1.0		1430	1.2		1400	1.3		1406	1.3		1330	1.4
	1806	0.3		1906	0.3		1921	0.0		2011	0.1		1908	-0.1		1951	0.1
08	0108	1.2	23	0245	1.3	08	0256	1.5	23	0302	1.4	08	0238	1.5	23	0224	1.4
	0758	0.5		0721	0.5		0917	0.4		0817	0.3		0858	0.3		0756	0.2
	1349	1.1		1353	1.1		1504	1.3		1424	1.4		1441	1.4		1356	1.5
	1849	0.2		1945	0.2		2009	-0.2		2047	0.0		1954	-0.2		2024	0.1
09	0204	1.3	24	0311	1.4	09	0330	1.5	24	0317	1.5	09	0300	1.5	24	0243	1.5
	0839	0.4		0802	0.4		0939	0.4		0853	0.2		0915	0.3		0824	0.1
	1430	1.2		1415	1.2		1539	1.4		1451	1.5		1513	1.5		1423	1.5
	1932	0.0		2026	0.1		2058	-0.2		2123	0.0		2039	-0.3		2054	0.1
10	0254	1.4	25	0332	1.4	10	0356	1.5	25	0336	1.5	10	0319	1.5	25	0300	1.5
	0913	0.4		0838	0.4		0945	0.4		0921	0.2		0919	0.3		0856	0.1
	1508	1.2		1443	1.3		1611	1.4		1513	1.5		1536	1.5		1453	1.6
	2019	-0.1		2108	0.1		2145	-0.2		2154	0.1		2121	-0.2		2124	0.1
11	0339	1.5	26	0349	1.4	11	0419	1.5	26	0354	1.4	11	0332	1.4	26	0315	1.4
	0936	0.4		0909	0.3		0956	0.4		0954	0.2		0924	0.3		0924	0.1
	1541	1.2		1506	1.4		1628	1.3		1541	1.5		1547	1.5		1517	1.5
	2109	-0.1		2149	0.1		2232	-0.2		2228	0.2		2204	-0.1		2139	0.2
12	0415	1.5	27	0408	1.4	12	0436	1.4	27	0413	1.4	12	0349	1.3	27	0334	1.4
	0954	0.5		0947	0.3		1009	0.4		1024	0.2		0941	0.3		0956	0.1
	1623	1.2		1534	1.4		1628	1.3		1606	1.5		1600	1.4		1547	1.5
	2202	-0.1		2232	0.1		2319	0.0		2243	0.3		2249	0.1		2147	0.3
13	0449	1.4	28	0428	1.4	13	0454	1.3	28	0436	1.3	13	0404	1.2	28	0354	1.3
	1015	0.5		1017	0.3		1024	0.4		1056	0.3		0958	0.3		1028	0.2

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		
	1032	0.6		1053	0.3		0511	1.2		1132	0.3		
	1724	1.1		1626	1.3		1038	0.4		1704	1.3		
	2349	0.0		2347	0.2		1651	1.1		2308	0.5		
15	0541	1.3	30	0517	1.3	15	0054	0.4		15	0013	0.5	
	1054	0.6		1126	0.4		0534	1.1			0439	1.1	
	1711	1.1		1656	1.3		1030	0.5			0930	0.4	
							1700	1.0			1656	1.1	
							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					
DIA	HORA	ALT	HORA	DIA	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	ALT	HORA		
	H M	M	H M	M	H M	M	DIA	H M	M	H M	M	H M	M	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	
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
	0415	1.0		0706	0.7		0454	0.9		0249	0.9		1006	1.0
	0906	0.6		1008	0.8		0943	0.8		0628	0.7		1539	0.5
	1111	0.7		1411	0.3		1456	0.4		1017	1.0		2323	1.0
	1421	0.5		2028	1.0		2323	1.0		1456	0.2			1138
	1947	0.8		2200	1.0					2104	1.0			1615
						31	0647	0.6						0.9
							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	HORA	ALT	HORA	ALT	HORA	ALT								
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA									
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	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											

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											
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT				
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA					
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	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					
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

CANANEIA - BASE SUL DO IOUSP												2024									
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	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	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				

CANANEIA - BASE SUL DO IOUSP												2024									
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																					
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	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	0.6		0704	0.6		0634	0.5		0254	0.9		0324	0.9		1104	1.1				
	0934	0.8		1008	0.8		1041	1.0		0649	0.7		0713	0.5		1643	0.5				
	1553	0.5		1741	0.6		1630	0.2		1038	1.0		1138	1.3							
	2034	1.1		2323	1.1		2121	1.2		1624	0.5		1749	0.2							
	2343	0.8								2306	1.2		2306	1.2							
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	0.5		1121	1.0		0247	1.1		1119	1.1		1219	1.3		0608	0.4				
	1104	0.9		1806	0.5		0702	0.4		1721	0.4		1849	0.3		1147	1.2				
	1708	0.4								1128	1.1					1836	0.6				
	2156	1.1								1726	0.1										
										2243	1.2										
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	1.2		0702	0.5		1209	1.3		0621	0.5		0754	0.5		0639	0.2				
	0721	0.4		1208	1.1		1819	0.1		1158	1.2		1306	1.4		1226	1.3				
	1204	1.1		1832	0.4					1808	0.4		1947	0.4		2021	0.5				
	1802	0.2																			
	2328	1.2																			
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	1.3		0656	0.4		0756	0.4		0636	0.3		0641	0.4		0709	0.1				
	1854	0.0		1247	1.2		1253	1.4		1234	1.3		1358	1.4		1313	1.3				
				1900	0.3		1909	0.0		1843	0.4		2036	0.4		2109	0.5				
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	0.3		0706	0.3		0813	0.4		0658	0.2		0656	0.3		0749	0.1				
	1326	1.4		1319	1.3		1334	1.5		1309	1.3		1451	1.4		1406	1.4				
	1939	-0.1		1926	0.2		1958	0.1		1919	0.4		2102	0.5		2151	0.6				
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	0.4		0726	0.2		0726	0.4		0724	0.1		0728	0.2		0826	0.0				
	1406	1.5		1354	1.4		1417	1.5		1351	1.4		1541	1.4		1500	1.4				
	2021	-0.1		1949	0.2		2041	0.2		1941	0.4		2058	0.6		2223	0.6				
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	0.4		0754	0.1		0711	0.3		0758	0.0		0806	0.2		0913	0.0				
	1449	1.5		1428	1.4		1504	1.5		1434	1.4		1626	1.4		1554	1.5				
	2100	-0.1		2009	0.2		2109	0.3		2006	0.4		2108	0.6		2102	0.6				
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	0.4		0819	0.0		0739	0.2		0832	0.0		0851	0.2		1006	0.0				
	1530	1.6		1504	1.5		1554	1.5		1517	1.4		1708	1.4		1639	1.5				
	2130	0.1		2028	0.2		2113	0.4		2026	0.5		2138	0.5		2115	0.6				
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	0.2		0851	0.0		0809	0.1		0908	0.1		0934	0.2		1104	0.1				
	1611	1.5		1541	1.5		1641	1.4		1602	1.4		1751	1.4		1719	1.5				
	2145	0.2		2051	0.3		2119	0.5		2054	0.5		2206	0.5		2145	0.6				
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	0.2		0921	0.1		0853	0.1		0956	0.1		1021	0.3		1208	0.1				
	1656	1.5		1615	1.4		1723	1.4		1649	1.4		1826	1.4		1802	1.5				
	2151	0.4		2109	0.3		2143	0.6		2115	0.5		2243	0.5		2209	0.6				
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	0.1		0958	0.1		0456	1.0		1054	0.2		1117	0.4		0409	0.9				
	1741	1.4		1654	1.4		0930	0.2		1730	1.4		1906	1.3		0711	1.0				
	2202	0.5		2134	0.4		1804	1.3		2149	0.6		2313	0.5		1309	0.1				
										2206	0.6					1847	1.5				
										1813	1.4					2247	0.5				
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	0.1		1039	0.2		1013	0.3		0345	0.9		1232	0.4		0517	0.8				
	1821	1.2		1736	1.4		1853	1.2		0613	1.0		1951	1.2		0823	1.0				
	2221	0.6		2158	0.5		2243	0.6		1209	0.2		2358	0.6		1409	0.2				
										1813	1.4					1928	1.4				
										2213	0.6					2319	0.6				
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	0.9		0423	0.9		1108	0.4		0458	0.8		0639	0.9		0604	0.7				
	0602	0.9		0608	0.9		1938	1.2		0749	0.9		0817	0.9		0924	1.1				
	1021	0.2		1134	0.3		2315	0.7		1336	0.2		1349	0.5		1509	0.3				
	1909	1.1		1819	1.3					1900	1.4		2043	1.2		2013	1.2				

CANANEIA - BASE SUL DO IOUSP												2024									
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																					
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	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					
															1432	1.1					
															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					

CANANEIA - BASE SUL DO IOUSP												2024									
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									
OUTUBRO								NOVEMBRO				DEZEMBRO									
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M						
01	0211	1.4	16	0221	1.6	01	0245	1.5	16	0323	1.5	01	0258	1.4	16	0400	1.5				
	0754	0.1		0830	-0.1		0802	0.2		0900	0.4		0802	0.4		0854	0.6				
	1454	1.5		1423	1.5		1526	1.4		1530	1.3		1543	1.3		1558	1.2				
	2006	0.2		2015	0.4		2041	0.0		2002	0.2		2104	0.1		2056	0.2				
02	0243	1.5	17	0300	1.6	02	0315	1.5	17	0408	1.5	02	0339	1.4	17	0447	1.4				
	0813	0.1		0904	0.0		0821	0.3		0900	0.5		0826	0.5		0911	0.6				
	1526	1.5		1508	1.5		1600	1.3		1611	1.2		1621	1.2		1639	1.2				
	2038	0.1		1956	0.3		2111	0.1		2043	0.2		2149	0.1		2136	0.2				
03	0308	1.5	18	0343	1.6	03	0351	1.4	18	0458	1.4	03	0417	1.4	18	0524	1.4				
	0832	0.1		0924	0.2		0847	0.3		0915	0.6		0858	0.5		0947	0.5				
	1600	1.5		1554	1.4		1636	1.2		1351	0.9		1704	1.1		1709	1.1				
	2104	0.1		2017	0.2		2151	0.1		1658	1.1		2236	0.1		2217	0.3				
										2121	0.2										
04	0338	1.5	19	0423	1.5	04	0426	1.4	19	0545	1.3	04	0502	1.4	19	0606	1.3				
	0854	0.2		0928	0.4		0908	0.4		0949	0.6		0926	0.5		1019	0.5				
	1632	1.4		1638	1.2		1709	1.1		1311	1.0		1758	1.1		1428	1.1				
	2136	0.1		2054	0.2		2226	0.2		1523	0.9		2332	0.2		1604	1.0				
										1741	1.0					1743	1.1				
										2206	0.3					2300	0.3				
05	0404	1.4	20	0508	1.4	05	0506	1.3	20	0632	1.2	05	0549	1.4	20	0651	1.3				
	0911	0.2		0941	0.5		0938	0.5		1019	0.6		1000	0.6		1100	0.5				
	1702	1.3		1715	1.1		1351	1.0		1356	1.1		1343	1.0		1506	1.1				
	2202	0.1		2128	0.2		1539	0.9		1656	0.9		1604	0.9		2347	0.4				
										1758	1.0		1900	1.0							
										2311	0.3		2256	0.4							
06	0436	1.4	21	0558	1.2	06	0556	1.3	21	0721	1.1	06	0043	0.2	21	0736	1.2				
	0936	0.3		1000	0.6		1004	0.5		1100	0.7		0638	1.4		1143	0.5				
	1736	1.2		1313	1.0		1354	1.0		1438	1.1		1039	0.6		1549	1.0				
	2236	0.2		1543	0.8		1658	0.8		1800	0.9		1404	1.0							
				1800	1.0		1906	0.9		1915	0.9		1704	0.8							
				2206	0.2					2354	0.5					2008	1.0				
07	0511	1.3	22	0656	1.1	07	0024	0.4	22	0817	1.1	07	0206	0.2	22	0038	0.5				
	0958	0.4		1026	0.7		0653	1.2		1153	0.7		0726	1.3		0826	1.1				
	1543	1.0		1354	1.1		1041	0.7		1511	1.0		1115	0.7		1230	0.6				
	1809	1.0		1702	0.8		1404	1.0		1839	0.8		1436	1.0		1632	1.0				
	2306	0.3		1851	0.9		1743	0.7		2043	0.9		1753	0.7		1828	0.9				
				2253	0.3					2039	0.9		2115	1.0		2024	0.9				
08	0600	1.2	23	0251	0.8	08	0245	0.4	23	0139	0.6	08	0321	0.2	23	0145	0.5				
	1023	0.5		0421	0.7		0753	1.2		0923	1.1		0821	1.3		0926	1.1				
	1417	1.0		0800	1.0		1117	0.8		1258	0.8		1204	0.7		1339	0.7				
	1711	0.9		1100	0.8		1423	1.1		1551	0.9		1504	1.0		2143	1.0				
	1906	0.9		1423	1.1		1811	0.6		1856	0.8		1823	0.7							
	2351	0.4		1808	0.8		2200	1.0		2200	0.9		2215	1.1							
				1956	0.8					2341	0.5										
09	0702	1.1	24	0300	0.7	09	0406	0.3	24	0445	0.5	09	0430	0.2	24	0326	0.6				
	1054	0.6		0511	0.6		0858	1.2		1032	1.1		0923	1.2		1034	1.1				
	1426	1.0		0915	1.0		1209	0.9		1830	0.7		1302	0.8		1547	0.6				
	1804	0.7		1151	0.9		1445	1.0		2302	1.0		1539	0.9		2247	1.1				
	2047	0.8		1456	1.1		1845	0.6					1858	0.6							
				1856	0.7		2302	1.1					2308	1.2							
10	0330	0.6	25	0115	0.6	10	0504	0.1	25	0532	0.5	10	0530	0.2	25	0619	0.6				
	0811	1.1		0239	0.6		1006	1.2		1132	1.2		1030	1.2		1136	1.1				
	1126	0.8		0551	0.5		1447	1.0		1745	0.6		1426	0.8		1732	0.5				
	1441	1.1		1039	1.0		1909	0.5		2349	1.1		1602	0.8		2338	1.2				
	1841	0.6		1308	1.0		2353	1.2					1926	0.6							
	2232	0.9		1458	1.0																
				1913	0.7																
				2302	0.9																
11	0453	0.4	26	0608	0.4	11	0558	0.0	26	0609	0.4	11	0000	1.3	26	0715	0.5				
	0932	1.1		1143	1.2		1113	1.3		1221	1.3		0628	0.2		1230	1.2				
	1213	1.0		1911	0.6		1941	0.5		1806	0.4		1139	1.2		1817	0.4				

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	
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	
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	ALT	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	HORA	ALT	DIA	HORA	ALT	DIA	
	H M	M	H M	M		H M	M	H M	M		H 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	0.9					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					

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						
JULHO					AGOSTO					SETEMBRO						
HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M			
01 0030	0.5	16 0026	0.5	01 0132	0.5	16 0143	0.5	01 0313	0.4	16 0009	0.7					
0521	1.0	0508	1.0	0613	0.9	0554	0.9	1221	0.9	0436	0.4					
1339	0.3	1323	0.2	1415	0.6	0832	0.7	1600	0.7	1247	1.1					
1758	0.8	1758	0.9	1824	0.8	1100	0.8	1709	0.7	1949	0.6					
						1453	0.6	2024	0.6							
						1756	0.7	2349	0.7							
						2104	0.5									
						2341	0.6									
02 0113	0.5	17 0113	0.5	02 0241	0.5	17 0302	0.5	02 0434	0.3	17 0043	0.8					
0613	0.9	0545	0.9	0715	0.8	0654	0.7	1251	1.0	0553	0.2					
1428	0.4	1415	0.3	1004	0.7	0834	0.7	1958	0.6	1317	1.1					
1851	0.8	1826	0.8	1200	0.7	1208	0.9			1908	0.5					
		2053	0.7	1515	0.6	1626	0.6									
		2204	0.7	1913	0.7	1813	0.7									
						2124	0.6									
03 0211	0.5	18 0209	0.5	03 0354	0.4	18 0024	0.7	03 0017	0.8	18 0056	0.9					
0717	0.9	0626	0.9	1243	0.8	0443	0.4	0543	0.2	0645	0.1					
1523	0.5	0902	0.8	1638	0.6	1300	1.1	1311	1.1	1349	1.1					
1958	0.8	1019	0.8	2353	0.8	2111	0.6	1924	0.5	1930	0.4					
		1515	0.4													
		1908	0.7													
		2100	0.7													
		2328	0.7													
04 0319	0.5	19 0321	0.5	04 0502	0.3	19 0100	0.8	04 0045	0.9	19 0043	1.0					
0849	0.8	0851	0.8	1308	0.9	0602	0.3	0639	0.1	0726	0.1					
1623	0.5	1156	0.9	1819	0.6	1345	1.1	1339	1.1	1402	1.1					
2149	0.8	1632	0.5			1932	0.5	1934	0.4	1954	0.3					
		2008	0.6													
		2117	0.6													
05 0432	0.4	20 0024	0.8	05 0023	0.8	20 0124	0.8	05 0111	1.0	20 0051	1.1					
1213	0.8	0447	0.4	0606	0.2	0700	0.1	0726	0.0	0806	0.0					
1726	0.5	1300	1.0	1338	1.0	1415	1.2	1400	1.2	1353	1.1					
2328	0.8	1758	0.5	1915	0.5	1958	0.5	2000	0.3	2019	0.3					
06 0538	0.3	21 0106	0.8	06 0051	0.9	21 0128	0.9	06 0139	1.1	21 0115	1.2					
1245	0.9	0604	0.3	0700	0.1	0749	0.0	0809	-0.1	0849	0.0					
1824	0.5	1354	1.1	1400	1.1	1447	1.2	1421	1.2	1351	1.1					
		1911	0.5	1954	0.4	2026	0.4	2030	0.3	2047	0.2					
07 0006	0.9	22 0143	0.8	07 0119	1.0	22 0117	1.0	07 0204	1.2	22 0151	1.3					
0632	0.2	0706	0.2	0751	0.0	0830	0.0	0854	-0.1	0923	0.0					
1321	1.0	1438	1.2	1421	1.1	1458	1.1	1438	1.2	1411	1.1					
1915	0.5	2004	0.5	2028	0.4	2054	0.3	2100	0.2	2115	0.2					
08 0038	0.9	23 0147	0.8	08 0151	1.0	23 0139	1.1	08 0228	1.3	23 0221	1.3					
0719	0.1	0758	0.0	0834	-0.1	0908	-0.1	0936	-0.1	0958	0.1					
1345	1.0	1513	1.2	1441	1.2	1438	1.1	1453	1.2	1441	1.1					
2000	0.4	2049	0.4	2100	0.3	2121	0.3	2136	0.2	2147	0.2					
09 0111	1.0	24 0123	0.9	09 0221	1.1	24 0209	1.2	09 0251	1.3	24 0256	1.3					
0804	0.0	0847	0.0	0915	-0.1	0951	0.0	1013	-0.1	1030	0.2					
1415	1.1	1547	1.1	1506	1.2	1445	1.1	1509	1.1	1509	1.1					
2045	0.4	2121	0.4	2136	0.3	2147	0.3	2208	0.2	2219	0.2					
10 0149	1.0	25 0149	1.0	10 0251	1.2	25 0247	1.3	10 0313	1.3	25 0328	1.2					
0853	0.0	0930	-0.1	0958	-0.1	1026	0.1	1056	0.0	1058	0.3					
1443	1.1	1549	1.1	1526	1.2	1509	1.1	1528	1.0	1539	1.0					
2121	0.4	2154	0.4	2206	0.3	2213	0.3	2245	0.3	2256	0.2					
11 0223	1.0	26 0221	1.1	11 0319	1.2	26 0317	1.3	11 0341	1.2	26 0400	1.1					
0936	0.0	1009	0.0	1043	-0.1	1100	0.2	1141	0.2	1124	0.5					
1517	1.2	1524	1.0	1549	1.1	1541	1.1	1556	1.0	1600	1.0					
2200	0.4	2221	0.4	2239	0.3	2243	0.3	2326	0.3	2341	0.3					
12 0300	1.1	27 0302	1.2	12 0345	1.2	27 0356	1.2	12 0409	1.1	27 0434	1.0					
1017	0.0	1054	0.0	1123	0.0	1136	0.3	1224	0.4	1158	0.6					
1547	1.1	1541	1.0	1611	1.1	1608	1.0	1613	0.9	1611	0.9					
2236	0.4	2249	0.4	2311	0.3	2317	0.3									
13 0336	1.1	28 0341	1.2	13 0409	1.2	28 0424	1.1	13 0019	0.4	28 0036	0.3					
1102	0.0	1136	0.1	1204	0.1	1202	0.4	0449	1.0	0506	0.9					

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	0202	0.4						
										0615	0.8						
										0902	0.7						
										1154	0.8						
										1424	0.7						
										1713	0.8						
										2147	0.6						
										2304	0.6						

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											
OUTUBRO								NOVEMBRO				DEZEMBRO											
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M						
01	0402	0.3	16 0006	0.8	01	0538	0.1	16 0632	0.3	01	0002	1.0	16 0643	0.4									
	1208	1.0	0523	0.3		1234	1.1	1215	0.9		0554	0.2	1149	0.9									
	1943	0.6	1249	1.0		1758	0.4	1834	0.3		1247	1.0	1845	0.2									
	2351	0.8	1821	0.5				2351	1.0		1802	0.3											
02	0511	0.2	17 0009	0.9	02	0021	1.1	17 0711	0.3	02	0053	1.1	17 0024	1.0									
	1239	1.1	0615	0.2		0626	0.0	1215	1.0		0649	0.2	0724	0.4									
	1839	0.5	1304	1.0		1302	1.1	1911	0.2		1319	1.0	1224	1.0									
			1849	0.4		1839	0.3				1854	0.2	1928	0.2									
			2358	1.0																			
03	0019	0.9	18 0700	0.1	03	0054	1.1	18 0026	1.1	03	0143	1.1	18 0109	1.0									
	0609	0.1	1311	1.0		0711	0.0	0753	0.2		0741	0.2	0806	0.4									
	1304	1.1	1913	0.3		1330	1.1	1245	1.0		1326	0.9	1302	1.0									
	1851	0.4				1919	0.2	1951	0.2		1947	0.1	2009	0.1									
04	0051	1.1	19 0019	1.1	04	0123	1.2	19 0106	1.1	04	0239	1.1	19 0145	1.1									
	0658	0.0	0743	0.1		0800	0.0	0826	0.3		0834	0.3	0847	0.4									
	1332	1.2	1256	1.0		1334	1.0	1315	1.1		1309	0.9	1339	1.0									
	1921	0.3	1945	0.2		2002	0.2	2028	0.1		2038	0.1	2054	0.0									
05	0115	1.2	20 0053	1.2	05	0141	1.2	20 0145	1.1	05	0339	1.1	20 0224	1.1									
	0745	-0.1	0817	0.1		0847	0.1	0902	0.3		0921	0.3	0924	0.4									
	1353	1.2	1313	1.1		1336	1.0	1353	1.1		1332	0.9	1413	1.0									
	1954	0.2	2015	0.2		2047	0.1	2106	0.1		2128	0.0	2136	0.0									
06	0139	1.2	21 0123	1.2	06	0208	1.2	21 0221	1.1	06	0447	1.1	21 0302	1.1									
	0826	-0.1	0854	0.1		0934	0.2	0939	0.4		1009	0.4	1000	0.4									
	1408	1.1	1343	1.1		1356	1.0	1421	1.1		1404	0.9	1451	1.0									
	2030	0.2	2051	0.1		2134	0.1	2149	0.1		2217	0.0	2217	0.0									
07	0200	1.3	22 0200	1.2	07	0234	1.1	22 0300	1.1	07	0556	1.0	22 0339	1.1									
	0908	-0.1	0928	0.2		1019	0.3	1011	0.5		1058	0.5	1039	0.5									
	1415	1.1	1411	1.1		1419	1.0	1454	1.0		1447	1.0	1524	1.0									
	2106	0.2	2124	0.1		2223	0.1	2230	0.1		2308	0.1	2300	0.1									
08	0221	1.3	23 0236	1.2	08	0309	1.0	23 0339	1.1	08	0408	0.9	23 0419	1.1									
	0953	0.0	0958	0.3		1106	0.5	1049	0.5		0502	0.9	1113	0.5									
	1428	1.1	1445	1.1		1453	1.0	1519	1.0		0704	1.0	1602	1.0									
	2147	0.2	2200	0.1		2313	0.1	2311	0.1		1143	0.6	2349	0.1									
											1524	1.0											
09	0249	1.2	24 0308	1.1	09	0354	0.9	24 0419	1.0	09	0002	0.1	24 0500	1.0									
	1036	0.2	1030	0.4		0558	0.9	1128	0.6		0439	0.9	1154	0.5									
	1454	1.0	1509	1.0		0753	0.9	1543	0.9		0606	0.8	1634	0.9									
	2228	0.2	2243	0.2		1200	0.6				0811	0.9											
						1521	0.9				1221	0.6											
											1611	1.0											
10	0317	1.1	25 0345	1.1	10	0011	0.2	25 0002	0.2	10	0058	0.2	25 0038	0.2									
	1119	0.4	1100	0.5		0438	0.8	0506	0.9		0517	0.8	0539	0.9									
	1513	1.0	1532	1.0		0613	0.8	1213	0.6		0706	0.8	1238	0.5									
	2317	0.2	2324	0.2		0909	0.9	1604	0.8		0915	0.8	1711	0.9									
						1256	0.7				1300	0.6											
						1600	0.9				1706	0.9											
11	0356	1.0	26 0419	1.0	11	0115	0.3	26 0058	0.2	11	0156	0.3	26 0126	0.2									
	1208	0.6	1139	0.6		0654	0.7	0617	0.9		0606	0.8	0630	0.9									
	1545	0.9	1545	0.9		1011	0.9	1308	0.6		0802	0.7	1323	0.5									
						1356	0.7	1641	0.8		1011	0.8	1758	0.9									
						1651	0.8				1347	0.6											
											1811	0.9											
12	0015	0.3	27 0013	0.3	12	0224	0.3	27 0158	0.3	12	0256	0.4	27 0219	0.2									
	0436	0.9	0500	0.9		1102	0.9	0939	0.9		0706	0.7	0938	0.8									
	0700	0.8	1228	0.7		1502	0.7	1406	0.6		0858	0.7	1417	0.5									
	0947	0.9	1556	0.9		1811	0.8	1747	0.7		1100	0.7	1906	0.8									
	1306	0.7				2249	0.7	1858	0.7		1441	0.6											
	1604	0.9						2100	0.8		1936	0.9											
	2028	0.5																					
	2202	0.5																					
13	0126	0.3	28 0113	0.3	13	0339	0.3	28 0258	0.3	13	0358	0.4	28 0315	0.3									
	0521	0.7	0556	0.8		1143	0.9	1036	0.9		0949	0.7	1054	0.8									
	0708	0.7	0721	0.8		1617	0.6	1508	0.5		1132	0.7	1519	0.5									

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

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									
JANEIRO				FEVEREIRO								MARCO					
HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M		
01 0406	1.4	16 0445	1.3	01 0449	1.4	16 0438	1.3	01 0345	1.5	16 0338	1.4						
0947	0.5	1004	0.4	1021	0.4	1049	0.3	0936	0.3	0951	0.1						
1534	1.2	1551	1.3	1626	1.2	1628	1.4	1600	1.4	1539	1.5						
2217	0.0	2306	0.1	2339	0.0	2349	0.3	2223	-0.1	2230	0.3						
02 0443	1.4	17 0500	1.3	02 0513	1.3	17 0458	1.2	02 0406	1.4	17 0356	1.3						
1013	0.5	1039	0.4	1043	0.4	1126	0.3	0958	0.3	1024	0.2						
1558	1.1	1615	1.3	1645	1.2	1700	1.3	1609	1.4	1606	1.5						
2311	0.0	2351	0.2					2308	0.1	2241	0.4						
03 0517	1.4	18 0517	1.2	03 0026	0.2	18 0024	0.5	03 0428	1.3	18 0413	1.3						
1039	0.5	1111	0.4	0545	1.2	0519	1.2	1017	0.3	1104	0.3						
1617	1.1	1651	1.3	1102	0.5	1213	0.4	1623	1.3	1641	1.4						
				1656	1.1	1736	1.2	2354	0.3	2141	0.5						
						2226	0.6										
						2358	0.6										
04 0004	0.0	19 0034	0.3	04 0115	0.3	19 0058	0.6	04 0453	1.1	19 0436	1.2						
0556	1.3	0545	1.2	0609	1.0	0545	1.0	1028	0.4	1153	0.3						
1106	0.6	1154	0.4	1115	0.5	1313	0.5	1643	1.1	1711	1.3						
1634	1.0	1724	1.2	1700	1.0	1813	1.1			2153	0.6						
1809	1.0			1947	0.9	2236	0.7										
1938	1.0			2202	1.0												
05 0058	0.1	20 0111	0.4	05 0213	0.5	20 0038	0.7	05 0045	0.5	20 0454	1.1						
0634	1.2	0611	1.1	0639	0.9	0158	0.7	0506	1.0	1254	0.4						
1138	0.6	1247	0.5	1109	0.6	0600	0.9	1008	0.4	1754	1.1						
1628	1.0	1808	1.1	1706	0.9	1423	0.5	1656	1.0	2204	0.7						
1806	0.9			1938	0.8	1908	1.0	1958	0.8								
2056	1.0			2343	1.0	2234	0.8	2232	0.9								
06 0151	0.2	21 0156	0.5	06 0326	0.7	21 0049	0.8	06 0151	0.7	21 0454	0.9						
0713	1.1	0647	1.0	0656	0.8	0336	0.8	0508	0.9	0909	0.7						
1208	0.6	1354	0.5	1102	0.6	0523	0.8	0956	0.5	1026	0.7						
1628	0.9	1904	1.0	1321	0.7	0900	0.7	1708	0.8	1358	0.5						
1819	0.9			1500	0.7	1154	0.8	1958	0.7	1845	1.0						
2202	1.0			1719	0.7	1538	0.5			2204	0.8						
				1930	0.7												
07 0249	0.3	22 0247	0.6	07 0054	1.2	22 0056	1.0	07 0000	1.1	22 0104	0.9						
0804	1.0	0728	0.9	0519	0.7	0753	0.6	0439	0.9	0817	0.7						
1249	0.7	1506	0.5	0817	0.7	1236	0.9	0953	0.6	1121	0.8						
1653	0.8	2032	0.9	1324	0.8	1645	0.4	1249	0.7	1502	0.5						
1845	0.8			1917	0.5			1509	0.6								
2313	1.1							1723	0.7								
								1941	0.6								
08 0353	0.4	23 0354	0.7	08 0147	1.3	23 0111	1.1	08 0056	1.2	23 0056	1.0						
0904	0.9	1158	0.9	0804	0.6	0800	0.5	0845	0.6	0743	0.6						
1545	0.7	1617	0.5	1343	0.9	1308	1.1	1256	0.8	1200	0.9						
1700	0.7	2353	1.0	1854	0.4	1745	0.3	1847	0.5	1609	0.4						
1858	0.7																
09 0028	1.2	24 0649	0.7	09 0223	1.4	24 0143	1.3	09 0132	1.3	24 0100	1.2						
0502	0.5	1249	1.0	0751	0.6	0819	0.5	0802	0.6	0749	0.5						
1024	0.8	1719	0.4	1356	1.1	1347	1.2	1306	1.0	1239	1.1						
1849	0.5			1923	0.2	1836	0.1	1832	0.3	1715	0.2						
10 0138	1.2	25 0056	1.1	10 0258	1.4	25 0208	1.4	10 0200	1.4	25 0119	1.3						
0615	0.5	0749	0.6	0753	0.5	0843	0.4	0741	0.5	0800	0.4						
1330	0.9	1328	1.1	1409	1.2	1417	1.3	1319	1.1	1313	1.2						
1854	0.4	1809	0.3	1958	0.1	1923	-0.1	1904	0.2	1815	0.1						
11 0232	1.3	26 0141	1.2	11 0323	1.5	26 0238	1.5	11 0224	1.4	26 0143	1.4						
0715	0.5	0819	0.5	0813	0.4	0858	0.4	0730	0.4	0819	0.4						
1351	1.0	1402	1.2	1426	1.3	1451	1.4	1334	1.3	1347	1.4						
1928	0.3	1856	0.1	2034	0.0	2009	-0.2	1936	0.1	1906	-0.1						
12 0311	1.4	27 0217	1.4	12 0341	1.5	27 0300	1.5	12 0243	1.4	27 0202	1.5						
0758	0.5	0849	0.4	0841	0.3	0913	0.3	0749	0.3	0834	0.3						
1419	1.1	1438	1.2	1447	1.4	1521	1.5	1354	1.4	1421	1.5						
2009	0.1	1939	0.0	2111	0.0	2056	-0.2	2009	0.0	1951	-0.2						
13 0353	1.4	28 0254	1.4	13 0353	1.4	28 0323	1.5	13 0256	1.4	28 0223	1.5						
0828	0.4	0911	0.4	0908	0.2	0923	0.3	0813	0.2	0839	0.3						

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	
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	
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	ALT	HORA	DIA	HORA	ALT	HORA	DIA	HORA	ALT	HORA	DIA	HORA	ALT	HORA	ALT	
	H M	M	H M	M	H M	M	H M	M	H M	M	H M	M	H M	M	H M	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									
							2339	0.8									
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						
										2139	1.1						
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	07	0054	1.1	22	0654	0.4
	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	23	0108	1.0
	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	1.2	24	0147	1.1
	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	1.2	25	0219	1.1
	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	1.2	26	0249	1.1
	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	1.2	27	0309	1.1
	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	1.2	28	0339	1.2
	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

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											
JULHO								AGOSTO											
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT				
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA					
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M				
01	0513	1.1	16	0432	1.0	01	0104	0.5	16	0453	0.9	01	0319	0.5	16	0047	0.8		
	1336	0.3		1319	0.2		0621	1.1		0749	0.8		0817	0.8		0706	0.5		
	1845	1.1		1843	1.2		1421	0.6		1109	1.0		1300	1.0		1308	1.3		
				2345	0.5		1839	1.0		1454	0.7		2024	0.7		2002	0.6		
										1830	0.9								
										2254	0.6								
02	0039	0.6	17	0436	1.0	02	0238	0.6	17	0458	0.8	02	0023	0.9	17	0100	1.0		
	0609	1.0		0656	0.9		0732	0.9		0738	0.7		0436	0.4		0643	0.3		
	1413	0.4		0928	1.0		1100	0.8		1226	1.1		1306	1.1		1345	1.4		
	1915	1.0		1411	0.3		1200	0.8		1623	0.8		2002	0.6		1956	0.5		
							1519	0.7		1756	0.8								
							1902	0.8		2236	0.7								
							2154	0.8											
							2358	0.8											
03	0156	0.6	18	0011	0.6	03	0402	0.5	18	0121	0.8	03	0058	1.1	18	0115	1.1		
	0745	1.0		0447	0.9		1232	0.9		0730	0.5		0538	0.3		0654	0.2		
	1500	0.5		0656	0.8		1945	0.7		1321	1.3		1326	1.2		1408	1.4		
	2006	0.9		1047	1.0					2019	0.6		2011	0.5		1941	0.5		
							1508	0.4											
							2008	0.9											
04	0334	0.6	19	0024	0.7	04	0049	1.0	19	0139	0.9	04	0132	1.2	19	0126	1.3		
	0943	1.0		0458	0.7		0511	0.4		0715	0.4		0624	0.1		0721	0.1		
	1556	0.6		0700	0.7		1258	1.1		1404	1.4		1351	1.4		1432	1.4		
	2354	0.9		1202	1.1		2000	0.6		2030	0.5		2034	0.4		1941	0.3		
							1617	0.5											
							2121	0.8											
05	0454	0.5	20	0002	0.8	05	0119	1.1	20	0154	1.1	05	0200	1.3	20	0143	1.4		
	1109	1.0		0113	0.8		0604	0.3		0719	0.2		0708	0.0		0753	0.0		
	1713	0.6		0706	0.6		1332	1.2		1443	1.5		1413	1.5		1447	1.4		
							1311	1.2		2021	0.5		2051	0.4		2002	0.2		
							1745	0.6											
06	0053	1.0	21	0145	0.9	06	0154	1.2	21	0209	1.2	06	0232	1.4	21	0202	1.5		
	0547	0.3		0704	0.4		0645	0.1		0743	0.1		0747	-0.2		0823	0.0		
	1213	1.1		1409	1.3		1404	1.3		1509	1.5		1438	1.5		1456	1.4		
	1915	0.6		1936	0.5		2049	0.5		2021	0.4		2102	0.3		2028	0.2		
07	0130	1.1	22	0206	1.0	07	0224	1.3	22	0221	1.3	07	0258	1.5	22	0224	1.6		
	0626	0.2		0721	0.3		0724	0.0		0813	0.0		0828	-0.2		0858	0.0		
	1308	1.2		1500	1.4		1438	1.4		1536	1.5		1458	1.5		1508	1.4		
	2006	0.5		2026	0.5		2106	0.4		2034	0.3		2113	0.3		2100	0.1		
08	0202	1.2	23	0230	1.1	08	0254	1.3	23	0236	1.4	08	0323	1.5	23	0253	1.6		
	0706	0.1		0754	0.1		0806	-0.1		0851	-0.1		0911	-0.2		0932	0.1		
	1356	1.3		1541	1.5		1506	1.5		1549	1.4		1521	1.5		1523	1.4		
	2045	0.5		2038	0.5		2126	0.4		2100	0.3		2126	0.3		2134	0.1		
09	0238	1.2	24	0241	1.2	09	0323	1.4	24	0254	1.5	09	0336	1.5	24	0317	1.6		
	0741	0.0		0832	0.0		0847	-0.2		0926	0.0		0954	-0.1		1000	0.3		
	1439	1.4		1611	1.5		1536	1.5		1558	1.4		1547	1.4		1541	1.3		
	2111	0.4		2102	0.4		2139	0.4		2126	0.2		2145	0.2		2208	0.1		
10	0302	1.3	25	0256	1.3	10	0341	1.4	25	0313	1.5	10	0353	1.4	25	0351	1.5		
	0821	0.0		0913	0.0		0932	-0.2		1004	0.0		1039	0.0		1026	0.4		
	1517	1.4		1639	1.5		1600	1.5		1606	1.4		1608	1.3		1558	1.3		
	2136	0.4		2124	0.4		2153	0.3		2158	0.2		2208	0.3		2247	0.2		
11	0328	1.3	26	0311	1.3	11	0354	1.4	26	0341	1.5	11	0406	1.3	26	0419	1.4		
	0904	-0.1		0958	0.0		1019	-0.1		1045	0.2		1124	0.2		0911	0.5		
	1553	1.5		1651	1.4		1626	1.5		1621	1.3		1636	1.2		1615	1.2		
	2153	0.4		2156	0.4		2209	0.3		2230	0.2		2226	0.3		2334	0.3		
12	0339	1.2	27	0336	1.4	12	0408	1.3	27	0406	1.5	12	0421	1.2	27	0456	1.3		
	0953	-0.1		1043	0.0		1108	0.0		1123	0.3		1213	0.5		0917	0.6		
	1626	1.5		1658	1.3		1654	1.4		1641	1.3		1656	1.1		1636	1.1		
	2211	0.4		2221	0.3		2230	0.3		2304	0.3		2230	0.4					
13	0351	1.2	28	0400	1.4	13	0419	1.3	28	0439	1.4	13	0438	1.0	28	0034	0.4		
	1045	0.0		1124	0.1		1158	0.1		1200	0.5		0749	0.9		0534	1.1		
	1658	1.4		1708	1.3		1719	1.3		1700	1.2		0954	0.9		0936	0.7		
	2228	0.5		2254	0.3		2251	0.4		2345	0.4		1313	0.7		1645	1.0		

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	HORA	ALT				
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA					
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M				
01	0358	0.4	16	0008	1.0	01	0013	1.2	16	0613	0.3	01	0026	1.3	16	0000	1.2		
	1251	1.1		0534	0.3		0521	0.1		1258	1.2		0545	0.2		0639	0.5		
	1939	0.5		1308	1.3		1219	1.3		1824	0.3		1154	1.2		1313	1.1		
				1900	0.6		1939	0.4					1902	0.4		1832	0.2		
02	0021	1.1	17	0021	1.1	02	0053	1.4	17	0023	1.3	02	0119	1.4	17	0049	1.2		
	0504	0.3		0615	0.2		0615	0.0		0658	0.3		0639	0.2		0730	0.5		
	1258	1.2		1328	1.3		1243	1.3		1324	1.2		1234	1.2		1351	1.2		
	1953	0.5		1849	0.4		1945	0.4		1900	0.2		1911	0.3		1911	0.1		
03	0056	1.2	18	0038	1.3	03	0132	1.5	18	0100	1.4	03	0215	1.4	18	0134	1.3		
	0558	0.1		0651	0.2		0702	0.0		0738	0.3		0730	0.2		0809	0.5		
	1313	1.3		1343	1.3		1311	1.4		1353	1.3		1311	1.2		1423	1.2		
	2004	0.4		1904	0.3		1945	0.3		1934	0.1		1943	0.2		1951	0.1		
04	0128	1.4	19	0100	1.4	04	0211	1.5	19	0139	1.4	04	0313	1.5	19	0213	1.4		
	0643	0.0		0723	0.1		0747	0.0		0813	0.3		0817	0.2		0847	0.4		
	1334	1.4		1358	1.3		1339	1.3		1417	1.3		1351	1.1		1453	1.2		
	2021	0.3		1928	0.2		2004	0.2		2011	0.1		2024	0.2		2030	0.1		
05	0200	1.5	20	0128	1.5	05	0247	1.5	20	0213	1.4	05	0409	1.4	20	0256	1.4		
	0724	-0.2		0758	0.1		0828	0.0		0849	0.4		0902	0.3		0915	0.5		
	1354	1.5		1415	1.3		1406	1.3		1438	1.3		1419	1.1		1517	1.2		
	2030	0.3		2000	0.1		2034	0.2		2051	0.1		2113	0.1		2111	0.0		
06	0232	1.6	21	0158	1.5	06	0332	1.5	21	0254	1.5	06	0500	1.4	21	0334	1.4		
	0808	-0.2		0832	0.2		0911	0.2		0919	0.4		0943	0.5		0941	0.5		
	1415	1.5		1434	1.3		1434	1.2		1454	1.2		1453	1.1		1528	1.2		
	2036	0.2		2036	0.1		2113	0.2		2130	0.1		2209	0.1		2158	0.1		
07	0258	1.6	22	0230	1.5	07	0423	1.4	22	0330	1.4	07	0551	1.3	22	0409	1.4		
	0849	-0.2		0902	0.3		0954	0.4		0938	0.5		1017	0.6		1002	0.5		
	1441	1.4		1451	1.3		1500	1.1		1508	1.2		1515	1.1		1536	1.1		
	2056	0.2		2109	0.1		2202	0.2		2217	0.1		2306	0.2		2249	0.1		
08	0321	1.5	23	0302	1.5	08	0528	1.2	23	0408	1.4	08	0636	1.2	23	0449	1.4		
	0930	0.0		0932	0.3		1036	0.6		0945	0.6		1056	0.7		1024	0.5		
	1504	1.3		1508	1.3		1517	1.1		1523	1.1		1547	1.0		1554	1.1		
	2123	0.2		2151	0.1		2302	0.3		2308	0.2					2341	0.1		
09	0339	1.4	24	0336	1.5	09	0706	1.1	24	0451	1.3	09	0004	0.2	24	0526	1.3		
	1011	0.2		0932	0.5		1113	0.7		1009	0.6		0708	1.1		1051	0.6		
	1528	1.2		1523	1.2		1532	1.0		1543	1.0		1128	0.7		1609	1.0		
	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	25	0032	0.1		
	1056	0.4		0911	0.5		0849	1.0		0534	1.2		0732	1.0		0608	1.3		
	1553	1.1		1545	1.1		1202	0.9		1036	0.7		1208	0.7		1123	0.6		
	2234	0.3		2323	0.3		1521	1.0		1553	1.0		1651	1.0		1619	1.0		
							2011	0.6							1956	1.0			
							2138	0.7											
11	0419	1.1	26	0449	1.3	11	0113	0.4	26	0058	0.3	11	0151	0.3	26	0121	0.2		
	1145	0.7		0921	0.6		1011	1.0		0626	1.1		0800	0.9		0658	1.2		
	1602	1.0		1558	1.1		1311	0.9		1128	0.8		1304	0.7		1204	0.6		
	2336	0.4					1502	0.9		1541	0.9		1828	0.9		1623	0.9		
							2011	0.7		1847	0.8					1811	0.9		
							2217	0.8		2106	0.9					2115	1.0		
12	0447	0.9	27	0019	0.3	12	0219	0.4	27	0153	0.3	12	0239	0.4	27	0211	0.2		
	0700	0.9		0528	1.2		1115	1.0		0738	1.1		0858	0.9		0753	1.1		
	0949	1.0		0945	0.7		1858	0.8		1253	0.8		1434	0.7		1300	0.7		
	1249	0.9		1600	1.0		2247	0.9		1528	0.9		2104	1.0		1641	0.8		
	1556	1.0								1834	0.7					1819	0.8		
	2053	0.5								2204	1.0					2217	1.1		
	2253	0.6																	
13	0104	0.5	28	0117	0.4	13	0323	0.4	28	0249	0.2	13	0328	0.4	28	0308	0.3		
	0508	0.8		0623	1.0		1156	1.1		0858	1.1		1030	0.9		0856	1.0		
	0658	0.7		1004	0.8		1808	0.7		1843	0.7		1558	0.6		1428	0.7		
	1113	1.1		1521	0.9		2302	1.0		2254	1.1		2215	1.0		1700	0.7		
	2047	0.6		1924	0.7											1839	0.7		
	2323	0.7		2206	0.8											2319	1.1		
14	0245	0.5	29	0217	0.4	14	0426	0.4	29	0345	0.2	14	0428	0.5	29	0411	0.3		
	1206	1.2		0802	1.0		1217	1.1		1008	1.1		1143	1.0		1000	1.0		

1951	0.7	1011	0.9	1739	0.6	1856	0.6	1700	0.5	1754	0.6							
2353	0.9	1202	0.9	2321	1.1	2339	1.2	2309	1.1									
		1902	0.6															
		2256	0.9															
15	0423	0.4	30	0319	0.3	15	0523	0.3	30	0445	0.2	15	0536	0.5	30	0026	1.2	
1245	1.2	1139	1.1	1238	1.1	1106	1.1	1234	1.1	0521	0.4							
1913	0.6	1906	0.6	1756	0.4	1904	0.5	1751	0.3	1109	1.0							
		2338	1.1	2353	1.2					1819	0.5							
31	0421	0.2								31	0136	1.3						
		1151	1.2							0630	0.4							
		1921	0.5							1221	1.0							
										1854	0.3							

CANANEIA - BASE SUL DO IOUSP												2025									
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	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA							
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	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		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		
	0856	0.6		0954	0.5		0858	0.3		0845	0.4		
	1502	1.2		1521	1.4		1556	1.4		1615	1.5		
	2113	0.2		2104	-0.1		2132	0.1		2206	-0.1		
14	0353	1.5	29	0309	1.6	14	0439	1.5		14	0338	1.6	
	0853	0.5		0943	0.5		0926	0.2			0838	0.1	
	1545	1.3		1602	1.4		1621	1.4			1528	1.5	
	2126	0.2		2147	-0.2		2153	0.1			2102	0.1	
15	0428	1.5	30	0354	1.6	15	0511	1.5		15	0408	1.5	
	0909	0.4		0906	0.5		1000	0.1			0906	0.1	
	1615	1.3		1643	1.4		1647	1.4			1558	1.5	
	2151	0.2		2226	-0.1		2209	0.2			2119	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

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							
ABRIL					MAIO					JUNHO					
HORA	ALT	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	ALT	HORA	ALT		
DIA		DIA		H M	M	H M	M	H M	M	H M	M	H M	M		
01	0504	1.2	16 0500	1.1	01	0100	0.9	16 0217	1.0	01	0215	1.1	16 0224	1.0	
	0921	0.2	1019	0.2		0306	0.8	0358	1.0		0551	0.8	0508	0.9	
	1758	1.3	1717	1.4		0532	1.0	0504	1.0		0702	0.9	0741	1.0	
	2219	0.6	2154	0.4		0947	0.2	1108	0.2		1156	0.4	1326	0.2	
						1838	1.3	1751	1.4		1949	1.2	1900	1.5	
						2213	0.7	2202	0.5		2326	0.6	2306	0.5	
02	0249	0.8	17 0224	1.0	02	0130	1.1	17 0202	1.0	02	0300	1.1	17 0247	1.0	
	0553	1.0	1100	0.3		0453	0.8	0521	0.9		0623	0.8	0547	0.8	
	0958	0.2	1758	1.3		0624	0.8	0636	0.9		0834	0.9	0851	1.0	
	1851	1.2	2213	0.5		1028	0.3	1224	0.3		1326	0.5	1430	0.2	
	2236	0.7				1924	1.2	1832	1.4		2038	1.1	1947	1.4	
						2249	0.8	2238	0.6				2349	0.6	
03	0147	1.0	18 0213	1.1	03	0204	1.2	18 0211	1.0	03	0013	0.7	18 0304	1.0	
	0449	0.8	0645	0.9		0556	0.7	0551	0.8		0336	1.0	0608	0.7	
	0645	0.9	1156	0.4		0749	0.8	0821	0.9		0653	0.8	0945	1.1	
	1039	0.3	1847	1.2		1128	0.5	1356	0.3		0945	0.9	1532	0.2	
	1447	0.8	2247	0.6		1551	0.6	1917	1.3		1443	0.5	2038	1.3	
	1621	0.8				2023	1.1	2309	0.7		2141	1.1			
	1953	1.1				2321	0.8								
	2256	0.8													
04	0208	1.2	19 0223	1.1	04	0243	1.2	19 0228	1.0	04	0134	0.8	19 0032	0.7	
	0600	0.7	0611	0.7		0636	0.7	0606	0.7		0402	0.8	0328	0.9	
	0756	0.7	0841	0.8		0911	0.8	0938	0.9		0654	0.7	0636	0.7	
	1119	0.4	1358	0.5		1323	0.6	1508	0.3		1036	1.0	1034	1.1	
	1502	0.8	1941	1.2		1451	0.6	2011	1.3		1541	0.5	1638	0.3	
	1721	0.7	2313	0.7		1639	0.6	2356	0.8		2258	1.1	2139	1.2	
	2106	1.0				2138	1.0								
	2311	0.9													
05	0238	1.2	20 0238	1.1	05	0009	0.9	20 0249	1.0	05	0600	0.6	20 0132	0.7	
	0649	0.6	0634	0.6		0304	1.1	0626	0.6		1115	1.1	0353	0.8	
	0924	0.7	1008	0.9		0702	0.6	1028	1.1		1638	0.5	0658	0.6	
	1224	0.6	1551	0.4		1030	0.9	1609	0.2				1117	1.2	
	1508	0.7	2045	1.2		1717	0.5	2111	1.3				1751	0.3	
	1806	0.6	2358	0.9		2302	1.1						2254	1.1	
06	0251	1.2	21 0249	1.1	06	0711	0.6	21 0056	0.9	06	0004	1.2	21 0721	0.5	
	0717	0.6	0654	0.5		1121	1.0	0256	1.0		0551	0.4	1206	1.3	
	1100	0.9	1109	1.0		1745	0.5	0651	0.5		1154	1.2	1908	0.4	
	1843	0.5				1656	0.2	1111	1.2		1738	0.5			
						2158	1.2								
								1708	0.1						
								2223	1.3						
07	0047	1.2	22 0102	1.0	07	0008	1.2	22 0708	0.5	07	0056	1.3	22 0008	1.1	
	0739	0.5	0241	1.1		0647	0.6	1153	1.3		0619	0.3	0747	0.4	
	1200	1.0	0711	0.4		1202	1.2	1806	0.1		1232	1.3	1302	1.3	
	1904	0.4	1156	1.2		1817	0.4	2336	1.3		1921	0.5	2023	0.4	
						1751	0.1								
						2315	1.3								
08	0104	1.3	23 0736	0.4	08	0053	1.3	23 0730	0.4	08	0136	1.3	23 0111	1.2	
	0730	0.5	1234	1.3		0624	0.4	1234	1.4		0654	0.1	0804	0.4	
	1245	1.2	1839	0.0		1241	1.3	1906	0.1		1311	1.3	1402	1.4	
	1921	0.3				1843	0.4				1945	0.5	2126	0.5	
09	0134	1.4	24 0021	1.4	09	0128	1.4	24 0039	1.3	09	0211	1.4	24 0204	1.2	
	0706	0.4	0756	0.4		0645	0.2	0743	0.4		0726	0.1	0809	0.3	
	1319	1.3	1311	1.4		1313	1.3	1317	1.4		1358	1.4	1502	1.4	
	1934	0.3	1926	-0.1		1915	0.4	2006	0.2		2015	0.6	2215	0.5	
10	0202	1.5	25 0109	1.5	10	0202	1.5	25 0132	1.3	10	0249	1.4	25 0253	1.2	
	0713	0.2	0808	0.4		0711	0.1	0723	0.4		0804	0.0	0811	0.2	
	1354	1.4	1354	1.5		1351	1.4	1409	1.5		1449	1.4	1556	1.5	
	1951	0.2	2013	0.0		1938	0.4	2104	0.3		2019	0.6	2224	0.6	
11	0236	1.5	26 0156	1.5	11	0238	1.5	26 0217	1.3	11	0323	1.3	26 0334	1.2	
	0741	0.1	0743	0.4		0747	0.0	0715	0.3		0845	0.0	0841	0.2	
	1426	1.4	1438	1.5		1428	1.4	1506	1.5		1534	1.4	1641	1.5	
	2011	0.2	2058	0.1		2002	0.4	2153	0.4		2038	0.5	2119	0.6	
12	0306	1.5	27 0241	1.5	12	0308	1.4	27 0302	1.3	12	0358	1.3	27 0409	1.2	

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				

CANANEIA - BASE SUL DO IOUSP											2025					
2025			CANANEIA - BASE SUL DO IOUSP								2025					
IOUSP-BASE SUL				NIVEL MEDIO				CARTA 1703								
JULHO					AGOSTO					SETEMBRO						
HORA	ALT	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	ALT	HORA	ALT	DIA	HORA	ALT
DIA		DIA		H M	H M	M	H M	M	DIA	H M	M	H M	M	DIA	H M	M
01	0319	1.1	16	0304	1.0		01	0019	0.5	16	0326	1.0		01	0515	0.6
	1221	0.4		0521	1.0			0456	0.9	0621	0.8			0953	1.0	
1956	1.2		0753	1.0			0558	0.9	0941	1.0			1245	0.9		
			1347	0.2			0800	1.0	1306	0.8			1539	1.0		
			1917	1.4			1224	0.6	1400	0.8			1939	0.6		
			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
	0400	1.0		0602	0.9			0921	1.0	0345	0.9			1102	1.1	
	0653	0.9		0858	1.0			1306	0.7	0654	0.6			1354	1.0	
	0817	0.9		1456	0.4			1609	0.9	1106	1.1			1538	1.0	
	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
	0438	0.9		0343	1.0			1028	1.0	0347	0.8			0634	0.2	
	0636	0.8		0634	0.8			1402	0.8	0715	0.4			1206	1.2	
	0926	1.0		1000	1.1			1617	0.9	1230	1.2			2034	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
	1021	1.0		0400	0.9			0609	0.4	0745	0.3			0708	0.0	
	1456	0.7		0700	0.6			1128	1.1	1326	1.3			1300	1.4	
	2309	1.1		1102	1.1			2028	0.6	2038	0.5			2058	0.4	
				1811	0.6									1949	0.4	
				2215	1.0											
05	0530	0.5	20	0153	0.7		05	0104	1.1	20	0109	1.1		05	0206	1.4
	1108	1.1		0408	0.8			0647	0.2	0806	0.2			0745	-0.1	
	1558	0.7		0724	0.5			1224	1.2	1406	1.4			1347	1.5	
	1708	0.7		1202	1.2			2100	0.5	2102	0.5			2113	0.4	
	1943	0.7		1941	0.5									1958	0.3	
				2356	1.0											
06	0023	1.1	21	0754	0.4		06	0149	1.3	21	0154	1.2		06	0241	1.5
	0609	0.3		1306	1.3			0719	0.0	0826	0.1			0821	-0.2	
	1158	1.2		2045	0.5			1319	1.3	1443	1.5			1428	1.6	
	2028	0.6						2126	0.5	2054	0.5			2119	0.4	
07	0113	1.2	22	0108	1.1		07	0226	1.4	22	0230	1.3		07	0313	1.5
	0647	0.2		0817	0.3			0758	-0.1	0839	0.1			0858	-0.2	
	1247	1.2		1408	1.4			1409	1.4	1519	1.5			1509	1.6	
	2106	0.6		2128	0.5			2149	0.5	2034	0.4			2056	0.4	
08	0158	1.3	23	0200	1.2		08	0302	1.4	23	0300	1.4		08	0349	1.5
	0723	0.1		0843	0.2			0838	-0.1	0853	0.1			0936	-0.2	
	1338	1.3		1458	1.4			1458	1.5	1556	1.5			1553	1.6	
	2139	0.6		2154	0.5			2153	0.5	2051	0.3			2056	0.3	
09	0238	1.3	24	0245	1.3		09	0339	1.5	24	0332	1.4		09	0419	1.5
	0800	0.0		0900	0.2			0915	-0.2	0906	0.1			1008	0.0	
	1428	1.4		1543	1.5			1539	1.6	1632	1.5			1632	1.6	
	2156	0.6		2121	0.6			2124	0.5	2111	0.2			2111	0.2	
10	0313	1.3	25	0317	1.3		10	0411	1.4	25	0356	1.4		10	0456	1.4
	0843	0.0		0915	0.1			0958	-0.2	0923	0.2			1038	0.2	
	1515	1.4		1621	1.5			1617	1.6	1704	1.5			1709	1.4	
	2139	0.6		2109	0.5			2121	0.4	2145	0.1			2139	0.2	
11	0353	1.3	26	0354	1.3		11	0447	1.4	26	0417	1.4		11	0538	1.3
	0924	-0.1		0930	0.2			1039	-0.1	0945	0.2			1054	0.4	
	1600	1.5		1658	1.5			1658	1.6	1741	1.4			1754	1.3	
	2119	0.5		2130	0.4			2139	0.3	2213	0.1			2206	0.2	
12	0428	1.3	27	0419	1.3		12	0519	1.3	27	0436	1.3		12	0630	1.2
	1013	0.0		0954	0.2			1119	0.0	1004	0.3			1102	0.6	
	1643	1.6		1736	1.5			1738	1.6	1811	1.3			1447	0.7	
	2132	0.5		2200	0.3			2202	0.3	2249	0.2			1839	1.1	
														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
	1156	0.0		1049	0.3		0456	1.1		1056	0.5
	1758	1.6		1845	1.3		0656	1.1		1515	0.9
	2223	0.4		2304	0.3		1234	0.4		1639	0.9
							1856	1.3		1930	1.0
							2302	0.3		2354	0.4
										1415	1.1
										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
	0645	1.1		1115	0.4		0554	0.9		1123	0.6
	1249	0.1		1919	1.2		0811	1.0		1511	1.0
	1838	1.5		2343	0.3		1302	0.6		1804	0.8
	2256	0.4					1402	0.6		2030	0.9
							1532	0.6			
							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			

CANANEIA - BASE SUL DO IOUSP											2025					
LATITUDE 25 1.0 S				LONGITUDE 47 55.5 W				FUSO +		2025						
IOUSP-BASE SUL					NIVEL MEDIO .80 M					CARTA 1703						
OUTUBRO					NOVEMBRO					DEZEMBRO						
HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M	HORA DIA	ALT H M			
01	0523	0.3	16 0651	0.3	01 0019	1.3	16 0028	1.2	01 0015	1.3	16 0028	1.2				
	1023	1.1	1226	1.2		0613	0.0	0643	0.4		0641	0.1	0730	0.5		
	1304	1.0	1943	0.6		1145	1.4	1302	1.3		1200	1.3	1315	1.3		
	1502	1.0				1943	0.4	1817	0.4		1939	0.5	1836	0.3		
	1938	0.5														
02	0024	1.1	17 0028	1.2	02 0056	1.4	17 0102	1.3	02 0100	1.4	17 0108	1.3				
	0604	0.1	0708	0.3		0658	-0.1	0656	0.4		0736	0.2	0741	0.5		
	1132	1.3	1304	1.3		1238	1.5	1345	1.4		1258	1.3	1400	1.3		
	1958	0.4	1906	0.5		1956	0.4	1856	0.2		1956	0.4	1917	0.1		
03	0102	1.3	18 0104	1.3	03 0134	1.5	18 0138	1.4	03 0151	1.5	18 0151	1.4				
	0647	-0.1	0721	0.2		0743	-0.1	0715	0.4		0828	0.2	0745	0.5		
	1226	1.4	1341	1.4		1324	1.5	1423	1.4		1353	1.3	1441	1.3		
	2017	0.4	1858	0.4		1958	0.4	1932	0.1		1949	0.4	2000	0.1		
04	0138	1.4	19 0139	1.4	04 0211	1.5	19 0209	1.4	04 0239	1.5	19 0230	1.4				
	0723	-0.2	0728	0.2		0823	0.0	0736	0.4		0924	0.4	0802	0.5		
	1311	1.5	1415	1.5		1411	1.5	1500	1.4		1445	1.3	1521	1.3		
	2036	0.4	1921	0.2		1939	0.3	2008	0.0		2002	0.3	2041	0.0		
05	0209	1.5	20 0206	1.5	05 0254	1.6	20 0249	1.4	05 0330	1.5	20 0309	1.4				
	0800	-0.2	0743	0.2		0902	0.2	0758	0.4		1021	0.5	0819	0.5		
	1358	1.6	1454	1.5		1500	1.4	1538	1.3		1532	1.2	1600	1.3		
	2038	0.4	1956	0.1		1956	0.3	2049	0.0		2028	0.3	2121	0.0		
06	0245	1.6	21 0239	1.5	06 0339	1.5	21 0324	1.4	06 0419	1.5	21 0353	1.5				
	0839	-0.2	0802	0.2		0923	0.4	0821	0.4		0911	0.6	0847	0.5		
	1441	1.6	1528	1.4		1549	1.3	1613	1.2		1615	1.2	1641	1.2		
	2017	0.3	2028	0.0		2021	0.2	2124	0.1		2108	0.3	2206	0.0		
07	0317	1.6	22 0308	1.5	07 0426	1.5	22 0402	1.4	07 0506	1.4	22 0432	1.5				
	0911	0.0	0819	0.3		0921	0.5	0849	0.4		0921	0.7	0913	0.5		
	1523	1.5	1602	1.4		1634	1.2	1653	1.2		1213	0.9	1721	1.2		
	2021	0.3	2102	0.0		2058	0.2	2206	0.1		1353	0.8	2254	0.1		
											1702	1.1				
											2153	0.3				
08	0356	1.5	23 0341	1.5	08 0515	1.4	23 0445	1.4	08 0556	1.4	23 0509	1.5				
	0939	0.1	0843	0.3		0934	0.6	0913	0.5		0954	0.6	0947	0.5		
	1606	1.4	1639	1.3		1219	0.8	1732	1.1		1306	1.0	1804	1.1		
	2045	0.2	2138	0.1		1409	0.8	2254	0.2		1513	0.9	2343	0.1		
						1717	1.1				1753	1.0				
						2136	0.3				2236	0.3				
09	0439	1.5	24 0413	1.4	09 0608	1.3	24 0524	1.4	09 0643	1.3	24 0553	1.5				
	0956	0.3	0904	0.3		0958	0.7	0949	0.5		1026	0.6	1017	0.5		
	1653	1.3	1709	1.2		1300	1.0	1400	1.0		1400	1.1	1500	1.0		
	2111	0.2	2209	0.1		1551	0.8	1617	0.9		1647	0.9	1602	1.0		
						1806	1.0	1823	1.0		1839	1.0	1854	1.1		
						2215	0.3	2349	0.3		2323	0.4				
10	0523	1.3	25 0453	1.4	10 0704	1.2	25 0608	1.3	10 0728	1.2	25 0039	0.2				
	1002	0.5	0930	0.4		1026	0.8	1019	0.6		1106	0.6	0636	1.4		
	1736	1.1	1409	1.0		1343	1.1	1413	1.0		1451	1.1	1056	0.5		
	2149	0.2	1521	1.0		1702	0.8	1715	0.9		1754	0.9	1506	1.0		
						1749	1.0	1904	0.9		1938	0.9	1706	0.9		
						2251	0.2	2306	0.4				1953	1.0		
11	0617	1.2	26 0536	1.3	11 0215	0.6	26 0106	0.3	11 0017	0.5	26 0143	0.2				
	1013	0.7	0958	0.5		0343	0.6	0658	1.3		0817	1.1	0719	1.4		
	1309	0.9	1402	1.0		0804	1.1	1100	0.6		1158	0.6	1136	0.5		
	1549	0.8	1702	0.9		1106	0.8	1438	1.0		1536	1.1	1524	1.0		
	1821	1.0	1838	0.9		1421	1.1	1753	0.8		1841	0.9	1749	0.9		
	2219	0.3	2334	0.4		1802	0.7	2047	0.9		2049	0.9	2053	1.0		
						2019	0.8									
12	0354	0.8	27 0624	1.2	12 0015	0.6	27 0236	0.3	12 0128	0.6	27 0258	0.3				
	0724	1.1	1026	0.6		0215	0.6	0754	1.3		0917	1.1	0811	1.3		
	1039	0.8	1415	1.1		0447	0.5	1147	0.7		1300	0.7	1215	0.6		
	1347	1.1	1756	0.8		0909	1.0	1458	1.0		1623	0.9	1553	0.9		
	1706	0.7	1958	0.9		1200	0.9	1811	0.7		1900	0.8	1809	0.8		
	1915	0.8				1502	1.1	2153	1.0		2158	1.0	2153	1.1		
	2300	0.4				1849	0.7									

						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	11	12	3	JAN	18	3	57	JAN	25	17	56	JAN	4	3	39
FEV	9	22	46	FEV	16	14	50	FEV	24	12	22	FEV	2	23	22
MAR	10	8	30	MAR	17	3	42	MAR	25	6	41	MAR	3	15	22
ABR	8	17	45	ABR	15	18	37	ABR	23	23	24	ABR	2	3	9
MAI	8	2	57	MAI	15	11	18	MAI	23	13	31	MAI	1	11	22
JUN	6	12	32	JUN	14	5	7	JUN	22	0	59	JUN	30	17	13
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	29	12	30	JAN	6	23	51	JAN	13	22	22	JAN	21	20	36
FEV	28	0	23	FEV	5	7	56	FEV	12	13	48	FEV	20	17	37
MAR	29	10	24	MAR	6	16	18	MAR	14	6	51	MAR	22	11	33
ABR	27	18	57	ABR	5	1	50	ABR	13	0	17	ABR	21	1	38
MAI	27	2	41	MAI	4	13	20	MAI	12	16	44	MAI	20	12	1
JUN	25	10	31	JUN	3	3	14	JUN	11	7	29	JUN	18	19	23
JUL	24	19	29	JUL	2	19	18	JUL	10	20	29	JUL	18	0	46
AGO	23	6	36	AGO	1	12	47	AGO	9	8	4	AGO	16	5	27
SET	21	20	26	AGO	31	6	45	SET	7	18	36	SET	14	10	53
OUT	21	12	51	SET	30	0	20	OUT	7	4	26	OUT	13	18	36
NOV	20	7	0	OUT	29	16	41	NOV	5	13	54	NOV	12	5	49
DEZ	20	1	42	NOV	28	7	4	DEZ	4	23	32	DEZ	11	21	3
DEZ				DEZ	27	19	0								

TEMPO SEGUNDO O TMG