

# **Tábuas das marés de Ubatuba, Santos e Cananéia para os anos de 2022 e 2023**

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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 2022 and 2023. 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 2022 e 2023. 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 2022 e 2023 (Harari & Mesquita, 2020). Na previsão são fornecidos os níveis máximos e mínimos de maré e seus respectivos instantes de ocorrência, nessas três estações maregráficas, localizadas na Base “Clarimundo de Jesus” (Base Norte do Instituto Oceanográfico da Universidade de São Paulo - IOUSP, em Ubatuba), no Porto de Santos (da Companhia Docas do Estado de São Paulo - CODESP, em Torre Grande) e na Base “Dr. João de Paiva

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

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

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

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

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

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

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

### **As Tábuas das Marés de Ubatuba, Santos e Cananéia**

A posição geográfica da estação maregráfica da Base de Ubatuba é 23°30,0' S - 45°07,3' W e o nível médio considerado na análise é de 0,66 m, conforme apresentado na Carta Náutica nº 1613 da Diretoria de Hidrografia e Navegação da Marinha do Brasil. Na previsão de maré em Ubatuba, foram consideradas 33 componentes de maré, as quais caracterizam uma maré do tipo "desigualdades diurnas", sendo que o estabelecimento do porto é em 02 h 46 min.

As previsões de maré do Porto de Santos são referentes a Torre Grande, localizado em 23°57,0' S - 46°18,5' W, tendo nível médio de 0,77 m, conforme a Carta Náutica nº 1701 da DHN. Foram consideradas 44 componentes harmônicas nas previsões do Porto de Santos, cuja classificação de maré é do tipo "desigualdades diurnas", com estabelecimento do porto em 03 h 01 min.

A posição geográfica da estação maregráfica da Base de Cananéia é 25°01,0' S - 47° 55,5' W e o nível médio considerado na análise é de 0,80 m, segundo a Carta Náutica nº 1703 da DHN. A previsão de maré em Cananéia foi realizada com 43 componentes harmônicas, as quais caracterizam uma maré de "desigualdades diurnas", cujo estabelecimento do porto é em 03 h 13 min.

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

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

Após as referências bibliográficas, são fornecidas as Tábuas das Marés de Ubatuba, Santos e Cananéia, para os anos de 2022 e 2023, 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  $\Delta T$  e correspondente porcentagem de  $\Delta H$  numa maré senoidal, onde  $\Delta T$  é o intervalo de tempo que decorre entre dois extremos consecutivos da maré e  $\Delta H$  é a correspondente variação de nível desses extremos. Os valores percentuais de  $\Delta H$  são aditivos após as baixamares e subtrativos após as preamares

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

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2022

UBATUBA - BASE NORTE DO IOUSP

2022

LATITUDE 23 30.0 S			LONGITUDE 45 7.3 W			FUSO + 3 HORAS													
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613							
JANEIRO						FEVEREIRO						MARCO							
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT			
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M
01	0236	1.1	16	0209	1.1	01	0358	1.2	16	0245	1.2	01	0256	1.2	16	0204	1.2		
	0811	0.3		0821	0.4		0939	0.4		0911	0.3		0843	0.4		0808	0.3		
	1424	0.9		1315	1.0		1415	1.0		1419	1.1		1358	1.0		1330	1.1		
	2011	0.0		2032	0.1		2143	-0.1		2136	0.0		2041	-0.1		2030	0.0		
02	0328	1.1	17	0232	1.1	02	0411	1.1	17	0309	1.2	02	0313	1.1	17	0223	1.2		
	0904	0.4		0900	0.4		1008	0.4		0947	0.3		0908	0.3		0841	0.2		
	1347	0.9		1354	1.1		1441	1.1		1453	1.2		1402	1.1		1400	1.2		
	2102	0.0		2111	0.0		2224	-0.1		2211	0.0		2121	-0.1		2108	-0.1		
03	0417	1.1	18	0300	1.1	03	0321	1.0	18	0332	1.2	03	0236	1.1	18	0239	1.2		
	0954	0.4		0938	0.4		1041	0.4		1017	0.3		0938	0.3		0913	0.2		
	1406	0.9		1432	1.1		1511	1.1		1523	1.2		1423	1.2		1428	1.3		
	2154	-0.1		2154	0.0		2308	0.0		2254	0.0		2202	-0.1		2149	0.0		
04	0502	1.1	19	0328	1.1	04	0345	1.0	19	0358	1.1	04	0247	1.1	19	0300	1.2		
	1038	0.5		1009	0.4		1104	0.4		1053	0.3		1002	0.3		0949	0.2		
	1439	1.0		1506	1.1		1553	1.2		1553	1.2		1458	1.2		1456	1.3		
	2245	-0.1		2238	0.0		2354	0.1		2332	0.1		2245	0.0		2226	0.0		
05	0345	1.0	20	0400	1.1	05	0411	1.0	20	0421	1.0	05	0311	1.1	20	0321	1.1		
	1111	0.5		1049	0.4		1130	0.5		1128	0.3		1028	0.3		1023	0.2		
	1515	1.0		1543	1.1		1628	1.1		1619	1.2		1530	1.2		1523	1.3		
	2334	0.0		2315	0.1								2321	0.2		2302	0.1		
06	0409	0.9	21	0430	1.1	06	0038	0.3	21	0009	0.2	06	0347	1.0	21	0343	1.0		
	1149	0.6		1121	0.4		0453	0.9		0449	1.0		1053	0.3		1100	0.2		
	1600	1.0		1615	1.1		1158	0.5		1209	0.4		1604	1.2		1556	1.2		
				2358	0.1		1706	1.0		1654	1.1		2358	0.3		2345	0.3		
07	0019	0.1	22	0504	1.0	07	0117	0.4	22	0056	0.3	07	0415	1.0	22	0404	1.0		
	0447	0.9		1200	0.4		0524	0.9		0508	0.9		1128	0.4		1147	0.3		
	1217	0.6		1649	1.0		1249	0.5		1302	0.4		1643	1.1		1624	1.1		
	1647	1.0					1754	0.9		1724	1.0								
08	0108	0.2	23	0045	0.2	08	0204	0.5	23	0153	0.5	08	0036	0.4	23	0034	0.4		
	0521	0.8		0532	0.9		0606	0.8		0534	0.8		0451	0.9		0423	0.9		
	1253	0.6		1247	0.4		1356	0.5		0836	0.6		1215	0.4		1245	0.4		
	1736	1.0		1719	1.0		1849	0.8		1015	0.7		1717	0.9		1702	0.9		
							2156	0.7		1406	0.4					2008	0.8		
							2334	0.7		1809	0.8					2149	0.8		
										2049	0.7								
										2302	0.8								
09	0202	0.3	24	0132	0.3	09	0300	0.6	24	0302	0.6	09	0113	0.6	24	0134	0.6		
	0606	0.8		0608	0.8		0700	0.8		0556	0.7		0517	0.9		0445	0.8		
	1339	0.6		1338	0.5		1511	0.5		0847	0.6		1321	0.4		0813	0.5		
	1834	0.9		1802	0.9					1134	0.7		1800	0.8		1015	0.6		
										1524	0.4		2100	0.7		1354	0.4		
										1921	0.7		2309	0.7		1754	0.8		
										2032	0.7					2000	0.7		
																2309	0.9		
10	0258	0.4	25	0224	0.3	10	0015	0.8	25	0009	0.9	10	0206	0.6	25	0302	0.7		
	0700	0.8		0645	0.8		0409	0.6		0554	0.6		0545	0.8		0449	0.7		
	1011	0.6		0813	0.7		0834	0.7		0854	0.5		1441	0.5		0823	0.5		
	1445	0.5		1021	0.8		1641	0.4		1223	0.8					1121	0.7		
	1956	0.8		1438	0.5					1653	0.3					1515	0.4		
				1856	0.9														
11	0358	0.5	26	0328	0.4	11	0056	0.9	26	0102	1.1	11	0000	0.8	26	0004	1.0		
	0806	0.8		1136	0.8		0536	0.6		0808	0.5		0319	0.7		0834	0.5		
	1604	0.5		1549	0.4		1111	0.8		1304	0.8		0600	0.7		1206	0.8		
							1753	0.3		1806	0.2		1602	0.4		1645	0.3		
12	0015	0.8	27	0000	0.9	12	0123	1.0	27	0149	1.2	12	0034	0.9	27	0051	1.1		
	0502	0.5		0449	0.5		0643	0.5		0753	0.5		0653	0.6		0747	0.5		
	0936	0.8		1230	0.8		1204	0.9		1339	0.9		1143	0.7		1247	0.8		
	1723	0.4		1700	0.4		1847	0.2		1904	0.1		1719	0.3		1756	0.2		
13	0053	0.9	28	0102	1.0	13	0149	1.0	28	0223	1.2	13	0100	1.0	28	0124	1.1		
	0602	0.5		0617	0.5		0728	0.4		0811	0.4		0647	0.5		0728	0.5		
	1058	0.9		1313	0.9		1239	0.9		1358	1.0		1209	0.8		1309	0.9		
	1821	0.3		1811	0.2		1930	0.1		1954	-0.1		1817	0.2		1851	0.1		
14	0123	0.9	29	0156	1.1	14	0209	1.1				14	0124	1.1	29	0158	1.1		

0654	0.4	0730	0.4	0804	0.4	0709	0.4	0749	0.4
1154	0.9	1354	0.9	1311	1.0	1234	0.9	1324	1.0
1906	0.2	1911	0.1	2011	0.0	1904	0.1	1936	0.0
15 0143	1.0	30 0243	1.2	15 0228	1.2	15 0147	1.1	30 0217	1.1
0739	0.4	0819	0.4	0839	0.3	0738	0.3	0808	0.3
1236	1.0	1421	0.9	1349	1.1	1302	1.0	1323	1.1
1951	0.1	2004	0.0	2054	0.0	1951	0.0	2015	-0.1
		31 0321	1.2					31 0204	1.0
		0900	0.4					0838	0.3
		1424	0.9					1336	1.2
		2056	-0.1					2058	0.0

2022

UBATUBA - BASE NORTE DO IOUSP

2022

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS					
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
ABRIL						MAIO						JUNHO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M	DIA	H	M
01	0151	1.1	16	0209	1.2	01	0147	1.1	16	0154	1.0	01	0238	1.1	16	0223	0.9
	0902	0.2		0845	0.1		0908	0.2		0900	0.1		1008	0.1		1034	0.0
	1402	1.3		1402	1.3		1415	1.2		1411	1.2		1524	1.1		1536	1.0
	2139	0.0		2119	0.0		2149	0.2		2145	0.2		2236	0.5		2311	0.5
02	0211	1.1	17	0224	1.1	02	0217	1.1	17	0211	1.0	02	0309	1.0	17	0300	0.9
	0932	0.2		0921	0.1		0943	0.2		0949	0.1		1051	0.1		1124	0.0
	1436	1.3		1428	1.3		1454	1.2		1447	1.2		1606	1.0		1613	0.9
	2213	0.1		2200	0.1		2221	0.3		2232	0.4		2309	0.5		1738	0.9
																1917	1.0
03	0247	1.1	18	0245	1.1	03	0254	1.1	18	0238	0.9	03	0345	1.0	18	0000	0.6
	1000	0.2		1000	0.1		1019	0.2		1039	0.1		1136	0.2		0341	0.9
	1508	1.2		1500	1.2		1530	1.1		1523	1.1		1647	1.0		1217	0.1
	2251	0.2		2245	0.2		2254	0.4		2321	0.5		2354	0.6		1653	0.9
																1817	0.8
																2041	0.9
04	0313	1.1	19	0304	1.0	04	0323	1.0	19	0302	0.9	04	0409	0.9	19	0047	0.6
	1034	0.3		1047	0.2		1058	0.2		1134	0.1		1223	0.3		0421	0.9
	1547	1.1		1532	1.1		1608	1.0		1606	1.0		1734	0.9		1313	0.2
	2321	0.4		2328	0.4		2330	0.5		1808	0.9					1732	0.8
										1958	0.9					1909	0.7
																2153	0.8
05	0351	1.0	20	0324	0.9	05	0354	1.0	20	0013	0.6	05	0045	0.6	20	0128	0.7
	1109	0.3		1138	0.2		1147	0.3		0334	0.9		0441	0.8		0515	0.9
	1619	1.0		1608	1.0		1649	0.9		1234	0.2		1315	0.3		1411	0.3
	2356	0.5								1656	0.8		2102	0.9		1817	0.7
										1832	0.8					2004	0.7
										2121	0.9					2253	0.8
06	0413	1.0	21	0019	0.6	06	0009	0.6	21	0115	0.7	06	0138	0.6	21	0217	0.6
	1156	0.3		0353	0.9		0409	0.9		0402	0.8		0521	0.8		0626	0.8
	1658	0.9		1239	0.3		1241	0.3		1339	0.2		1415	0.3		1513	0.3
				1656	0.9		1732	0.8		1756	0.7		2208	0.9		1917	0.7
				1906	0.8		1947	0.8		1858	0.7					2100	0.7
				2154	0.9		2130	0.8		2226	0.9					2338	0.7
07	0039	0.6	22	0128	0.7	07	0104	0.7	22	0228	0.7	07	0236	0.6	22	0321	0.6
	0439	0.9		0404	0.8		0424	0.8		0449	0.8		0832	0.8		0804	0.8
	1258	0.4		0800	0.5		1345	0.4		0813	0.6		1517	0.3		1011	0.8
	1738	0.8		0956	0.6		2228	0.9		1008	0.7		2256	0.9		1617	0.4
	2009	0.7		1351	0.3					1447	0.3					2032	0.7
	2239	0.8		1753	0.7					2315	0.9					2200	0.7
				1913	0.7												
				2258	1.0												
08	0136	0.7	23	0354	0.7	08	0208	0.7	23	0400	0.7	08	0334	0.5	23	0004	0.7
	0451	0.8		0806	0.5		0454	0.7		0623	0.7		1006	0.8		0436	0.5
	1406	0.4		1058	0.7		1454	0.4		0813	0.7		1617	0.3		1158	0.8
	2319	0.9		1504	0.3		2308	0.9		1100	0.8		2339	1.0		1719	0.4
				2349	1.0					1556	0.3					2153	0.8
09	0249	0.7	24	0802	0.6	09	0321	0.6	24	0000	0.9	09	0432	0.4	24	0541	0.4
	0458	0.7		1143	0.8		0654	0.7		0504	0.6		1106	0.9		1232	0.9
	1524	0.4		1623	0.3		1008	0.7		1141	0.8		1713	0.2		1813	0.4
	2356	0.9					1602	0.3		1658	0.3					2254	0.8
							2345	1.0									
10	0721	0.6	25	0023	1.1	10	0432	0.5	25	0032	0.9	10	0015	1.0	25	0634	0.3
	1119	0.7		0641	0.6		1104	0.8		0547	0.5		0526	0.3		1239	0.9
	1645	0.3		1213	0.9		1704	0.3		1204	0.9		1154	1.0		1902	0.4
				1732	0.2					1756	0.2		1808	0.2		2343	0.9
11	0024	1.0	26	0100	1.0	11	0013	1.0	26	0049	0.9	11	0053	1.0	26	0715	0.2
	0623	0.5		0647	0.5		0526	0.4		0624	0.4		0619	0.2		1313	1.0
	1147	0.8		1238	0.9		1141	0.9		1208	1.0		1239	1.1		1949	0.4
	1747	0.2		1823	0.1		1758	0.2		1845	0.2		1902	0.2			
										2347	0.9						
12	0053	1.1	27	0123	1.0	12	0045	1.1	27	0700	0.3	12	0124	1.0	27	0026	1.0
	0626	0.4		0706	0.4		0609	0.3		1219	1.0		0708	0.2		0758	0.1
	1213	0.9		1241	1.0		1213	1.1		1928	0.2		1326	1.1		1338	1.1



	1836	0.1		1909	0.1		1847	0.1		1954	0.2		2028	0.4			
13	0115	1.1	28	0126	1.0	13	0108	1.1	28	0009	1.0	13	0139	1.0	28	0108	1.0
	0658	0.3		0736	0.3		0654	0.2		0739	0.2		0800	0.1		0839	0.1
	1241	1.1		1245	1.1		1243	1.1		1253	1.1		1415	1.1		1415	1.1
	1917	0.0		1954	0.1		1930	0.1		2006	0.2		2047	0.3		2104	0.4
14	0136	1.2	29	0053	1.0	14	0130	1.1	29	0047	1.0	14	0138	0.9	29	0151	1.1
	0732	0.2		0802	0.2		0736	0.2		0815	0.2		0851	0.0		0915	0.1
	1306	1.2		1309	1.2		1313	1.2		1326	1.1		1439	1.1		1451	1.1
	2000	0.0		2034	0.1		2011	0.1		2049	0.3		2138	0.4		2143	0.4
15	0153	1.2	30	0111	1.1	15	0139	1.1	30	0121	1.1	15	0158	0.9	30	0226	1.1
	0806	0.2		0838	0.2		0817	0.1		0853	0.1		0943	0.0		0956	0.1
	1334	1.2		1343	1.2		1341	1.2		1408	1.1		1526	1.1		1524	1.1
	2043	0.0		2109	0.1		2058	0.1		2123	0.3		2224	0.4		2217	0.4
									31	0200	1.1						
										0932	0.1						
										1447	1.1						
										2158	0.4						

2022

UBATUBA - BASE NORTE DO IOUSP

2022

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS					
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
JULHO						AGOSTO						SETEMBRO					
HORA			ALT			HORA			ALT			HORA			ALT		
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0304	1.1	16	0304	1.0	01	0402	1.1	16	0404	1.2	01	0434	1.1	16	0500	1.0
	1039	0.1		1108	-0.1		1141	0.1		1213	0.2		1226	0.3		1258	0.6
	1602	1.1		1602	1.0		1641	1.0		1623	0.9		1653	0.9		1658	0.9
	2254	0.5		2326	0.5		2339	0.4		2343	0.4						
02	0343	1.0	17	0345	1.1	02	0432	1.1	17	0447	1.1	02	0034	0.4	17	0058	0.4
	1119	0.1		1158	0.0		1217	0.2		1258	0.4		0506	1.0		0543	0.8
	1638	1.0		1623	0.9		1709	1.0		1700	0.9		1313	0.4		0849	0.7
	2332	0.5		2358	0.5								1709	0.8		1102	0.7
																1351	0.7
																1723	0.8
																2217	0.5
03	0415	1.0	18	0421	1.1	03	0017	0.4	18	0023	0.5	03	0136	0.4	18	0211	0.4
	1202	0.2		1251	0.2		0502	1.0		0523	1.0		0551	0.9		0654	0.7
	1717	1.0		1700	0.9		1300	0.3		1347	0.5		0851	0.8		0811	0.7
							1739	0.9		1739	0.9		1017	0.8		1151	0.8
										2200	0.5		1419	0.6		1500	0.7
										2300	0.5		1732	0.7		1730	0.7
													2036	0.6			
													2258	0.7			
04	0009	0.5	19	0032	0.5	04	0104	0.4	19	0124	0.5	04	0251	0.4	19	0341	0.4
	0451	1.0		0506	1.0		0538	1.0		0609	0.8		0651	0.7		1217	0.9
	1253	0.2		1341	0.3		1353	0.4		0926	0.7		0821	0.7		1900	0.6
	1758	0.9		1739	0.8		1808	0.8		1124	0.7		1147	0.9		2341	0.7
				2108	0.6					1439	0.6		1558	0.6			
				2209	0.6					1817	0.8		1745	0.7			
										2217	0.6		2045	0.6			
										2341	0.6		2358	0.7			
05	0058	0.5	20	0109	0.5	05	0202	0.4	20	0251	0.5	05	0411	0.4	20	0502	0.4
	0526	0.9		0558	0.9		0619	0.9		0734	0.7		1238	1.0		1249	1.0
	1343	0.3		1434	0.4		1451	0.4		0906	0.7		2036	0.5		1854	0.6
	1849	0.8		1819	0.8		1847	0.7		1211	0.8					2356	0.8
				2149	0.6		2045	0.7		1553	0.6						
				2311	0.6		2300	0.7		1926	0.7						
										2300	0.6						
										2356	0.7						
06	0151	0.5	21	0208	0.5	06	0308	0.4	21	0417	0.4	06	0043	0.8	21	0604	0.3
	0615	0.9		0700	0.8		0724	0.8		1253	0.9		0536	0.2		1309	1.1
	1436	0.3		1006	0.7		0900	0.8		1738	0.6		1319	1.2		1904	0.5
	2204	0.8		1124	0.7		1130	0.8		2215	0.7		1945	0.5			
				1532	0.5		1602	0.5									
				1917	0.8		2047	0.6									
				2356	0.6												
07	0247	0.5	22	0330	0.5	07	0000	0.8	22	0539	0.3	07	0115	0.9	22	0019	0.9
	0728	0.8		0838	0.8		0424	0.4		1315	1.0		0639	0.1		0653	0.2
	1534	0.3		1000	0.8		1239	1.0		1849	0.5		1400	1.2		1332	1.1
	2308	0.9		1219	0.8		1738	0.5		2351	0.8		1958	0.4		1924	0.4
				1641	0.5												
				2041	0.8												
08	0349	0.4	23	0458	0.4	08	0053	0.8	23	0636	0.2	08	0149	1.0	23	0047	1.0
	1051	0.9		1258	0.9		0543	0.3		1341	1.0		0730	0.0		0734	0.1
	1636	0.4		1751	0.5		1332	1.1		1926	0.5		1439	1.2		1347	1.1
				2215	0.8		1906	0.5					2021	0.4		1953	0.3
09	0002	0.9	24	0606	0.3	09	0134	0.9	24	0026	0.9	09	0200	1.0	24	0113	1.1
	0453	0.4		1328	0.9		0649	0.1		0717	0.1		0815	-0.1		0811	0.0
	1213	0.9		1849	0.5		1415	1.2		1358	1.1		1502	1.2		1402	1.2
	1743	0.4		2332	0.9		2000	0.4		1956	0.4		2051	0.3		2023	0.2
10	0053	0.9	25	0658	0.2	10	0206	0.9	25	0100	1.0	10	0158	1.1	25	0143	1.2
	0554	0.3		1351	1.0		0743	0.0		0800	0.0		0900	-0.1		0853	0.0
	1317	1.0		1934	0.4		1500	1.2		1415	1.1		1447	1.1		1419	1.2
	1849	0.4					2041	0.4		2026	0.3		2115	0.3		2056	0.2
11	0136	0.9	26	0023	0.9	11	0230	1.0	26	0134	1.1	11	0209	1.2	26	0211	1.3
	0656	0.2		0741	0.1		0834	-0.1		0841	0.0		0945	-0.1		0930	0.0
	1411	1.1		1409	1.1		1539	1.2		1430	1.2		1430	1.0		1439	1.2

	1951	0.4		2013	0.4		2115	0.4		2058	0.3		2145	0.3		2128	0.2
12	0208	0.9	27	0104	1.0	12	0226	1.0	27	0206	1.2	12	0238	1.2	27	0241	1.3
	0751	0.0		0819	0.1		0917	-0.1		0917	0.0		1023	0.0		1004	0.0
	1504	1.2		1428	1.1		1604	1.1		1451	1.2		1454	1.0		1504	1.1
	2045	0.4		2051	0.4		2151	0.4		2128	0.3		2211	0.3		2202	0.2
13	0230	0.9	28	0145	1.1	13	0230	1.1	28	0238	1.2	13	0308	1.3	28	0308	1.3
	0845	0.0		0900	0.0		1004	-0.1		0956	0.0		1102	0.1		1043	0.1
	1554	1.2		1449	1.1		1523	1.0		1513	1.2		1521	1.0		1524	1.1
	2132	0.4		2123	0.3		2219	0.4		2200	0.2		2241	0.3		2241	0.2
14	0217	0.9	29	0219	1.1	14	0258	1.2	29	0308	1.2	14	0347	1.2	29	0339	1.2
	0934	-0.1		0941	0.0		1051	-0.1		1036	0.0		1143	0.3		1117	0.3
	1643	1.1		1515	1.2		1524	1.0		1539	1.1		1556	1.0		1551	1.0
	2211	0.4		2158	0.3		2249	0.4		2232	0.3		2311	0.3		2323	0.3
15	0232	1.0	30	0258	1.1	15	0330	1.2	30	0338	1.2	15	0419	1.1	30	0408	1.1
	1021	-0.1		1019	0.0		1134	0.1		1108	0.1		1217	0.4		1200	0.4
	1719	1.0		1543	1.1		1556	1.0		1604	1.1		1624	1.0		1606	0.9
	2253	0.5		2230	0.4		2313	0.4		2304	0.3		2356	0.4			
			31	0330	1.1				31	0404	1.2						
				1058	0.1					1147	0.2						
				1613	1.1					1626	1.0						
				2302	0.4					2346	0.3						

2022

UBATUBA - BASE NORTE DO IOUSP

2022

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS					
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
OUTUBRO						NOVEMBRO						DEZEMBRO					
HORA			ALT			HORA			ALT			HORA			ALT		
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0013	0.3	16	0043	0.4	01	0230	0.3	16	0230	0.4	01	0317	0.3	16	0254	0.3
	0449	1.0		0526	0.8		1109	1.0		1049	0.9		1134	0.9		1028	0.9
	1256	0.6		0804	0.7		1956	0.6		1456	0.6		1604	0.6		1502	0.5
	1624	0.8		1009	0.8		2306	0.7		2102	0.7		2315	0.8		2104	0.8
				1309	0.7												
				1645	0.8												
02	0121	0.4	17	0151	0.4	02	0349	0.3	17	0339	0.4	02	0423	0.3	17	0353	0.3
	0528	0.8		1102	0.8		1158	1.0		1123	0.9		1209	0.9		1113	0.9
	0751	0.7		1417	0.7		1843	0.6		1602	0.6		1706	0.6		1600	0.5
	1038	0.9		1649	0.8		2351	0.8		2228	0.8		2356	0.9		2226	0.9
	1409	0.7															
	1641	0.8															
	2008	0.5															
	2249	0.6															
03	0241	0.4	18	0302	0.4	03	0458	0.2	18	0441	0.3	03	0526	0.3	18	0449	0.3
	0743	0.7		1141	0.9		1238	1.0		1156	1.0		1247	0.9		1153	0.9
	1136	1.0		1649	0.7		1819	0.5		1700	0.5		1754	0.5		1700	0.4
	2013	0.5		1902	0.6					2313	0.9					2328	0.9
	2341	0.7		2241	0.7												
04	0402	0.3	19	0419	0.4	04	0023	0.9	19	0536	0.2	04	0026	0.9	19	0543	0.3
	1217	1.1		1208	1.0		0558	0.1		1223	1.0		0619	0.3		1228	1.0
	2000	0.5		1823	0.6		1306	1.0		1747	0.4		1245	0.8		1754	0.3
				2324	0.8		1843	0.4		2351	1.0		1839	0.4			
05	0017	0.8	20	0524	0.3	05	0043	1.0	20	0621	0.2	05	0028	1.0	20	0021	1.0
	0519	0.2		1238	1.0		0649	0.1		1245	1.1		0708	0.3		0638	0.3
	1300	1.2		1813	0.5		1330	1.0		1830	0.3		1151	0.9		1258	1.0
	1915	0.5		2354	0.9		1911	0.3					1919	0.3		1849	0.2
06	0054	0.9	21	0615	0.2	06	0043	1.1	21	0023	1.1	06	0041	1.0	21	0111	1.1
	0621	0.1		1258	1.1		0734	0.1		0706	0.1		0754	0.3		0728	0.3
	1338	1.2		1839	0.4		1247	1.0		1306	1.1		1223	1.0		1328	1.0
	1924	0.4					1945	0.3		1913	0.2		2000	0.2		1939	0.1
07	0115	1.0	22	0021	1.0	07	0056	1.1	22	0054	1.2	07	0117	1.1	22	0200	1.1
	0709	0.0		0700	0.1		0813	0.1		0753	0.1		0836	0.3		0821	0.3
	1404	1.1		1315	1.1		1256	1.0		1323	1.1		1302	1.0		1339	0.9
	1951	0.4		1911	0.3		2019	0.2		1956	0.1		2041	0.1		2028	0.0
08	0124	1.1	23	0049	1.1	08	0123	1.2	23	0126	1.2	08	0156	1.1	23	0249	1.1
	0756	0.0		0743	0.0		0856	0.2		0836	0.2		0911	0.3		0909	0.3
	1417	1.0		1330	1.1		1323	1.1		1339	1.0		1343	1.1		1358	0.9
	2015	0.3		1949	0.2		2054	0.2		2043	0.1		2119	0.1		2119	0.0
09	0124	1.2	24	0115	1.2	09	0200	1.2	24	0202	1.2	09	0236	1.1	24	0347	1.1
	0839	0.0		0819	0.0		0934	0.2		0919	0.2		0951	0.4		1000	0.4
	1338	1.0		1347	1.1		1400	1.1		1402	1.0		1419	1.1		1419	0.9
	2045	0.2		2023	0.1		2132	0.1		2128	0.0		2158	0.1		2209	0.0
10	0147	1.2	25	0145	1.3	10	0238	1.2	25	0236	1.2	10	0315	1.1	25	0506	1.1
	0917	0.0		0900	0.0		1008	0.3		1006	0.3		1024	0.4		1051	0.5
	1356	1.1		1408	1.1		1434	1.1		1424	1.0		1500	1.0		1454	0.9
	2115	0.2		2100	0.1		2208	0.2		2215	0.1		2241	0.1		2302	0.0
11	0213	1.3	26	0213	1.3	11	0315	1.1	26	0313	1.1	11	0358	1.0	26	0423	1.0
	0958	0.1		0939	0.1		1045	0.4		1056	0.5		1100	0.5		0624	1.0
	1421	1.1		1428	1.1		1508	1.1		1456	0.9		1538	1.0		1136	0.5
	2147	0.2		2141	0.1		2251	0.2		2308	0.1		2321	0.2		1526	0.9
																2356	0.0
12	0253	1.2	27	0247	1.2	12	0358	1.0	27	0358	1.0	12	0438	1.0	27	0438	0.9
	1036	0.2		1019	0.2		1117	0.5		1151	0.6		1139	0.5		0600	0.9
	1456	1.1		1453	1.0		1543	1.0		1519	0.9		1611	0.9		0747	0.9
	2221	0.2		2224	0.1		2336	0.2								1215	0.6
																1608	0.9
13	0324	1.2	28	0317	1.2	13	0439	0.9	28	0004	0.1	13	0006	0.2	28	0051	0.1
	1108	0.4		1100	0.4		1158	0.6		0443	0.9		0523	0.9		0511	0.8
	1526	1.0		1511	1.0		1609	0.9		0604	0.9		1219	0.6		0700	0.8
	2258	0.3		2311	0.2					0832	0.9		1647	0.9		0900	0.8
										1247	0.7					1300	0.6
										1558	0.8					1658	0.9



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PORTO DE SANTOS - TORRE GRANDE

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LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS							
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701							
JANEIRO						FEVEREIRO						MARCO							
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT			
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M
01	0249	1.4	16	0236	1.4	01	0408	1.4	16	0330	1.5	01	0315	1.5	16	0238	1.5		
	0839	0.4		0811	0.3		0938	0.5		0909	0.2		0928	0.4		0817	0.2		
	1456	1.1		1406	1.2		1558	1.3		1449	1.4		1502	1.4		1408	1.4		
	2006	0.0		2004	0.2		2124	-0.2		2056	0.0		2019	-0.2		2006	0.0		
02	0343	1.4	17	0308	1.4	02	0424	1.4	17	0356	1.5	02	0330	1.4	17	0302	1.5		
	0924	0.5		0853	0.3		0938	0.5		0939	0.2		0911	0.4		0845	0.2		
	1538	1.1		1430	1.3		1615	1.3		1511	1.4		1523	1.4		1430	1.5		
	2054	0.0		2036	0.1		2211	-0.1		2134	0.0		2102	-0.2		2036	0.0		
03	0426	1.4	18	0345	1.4	03	0423	1.3	18	0419	1.4	03	0328	1.4	18	0323	1.5		
	0934	0.5		0928	0.3		0954	0.5		1008	0.2		0908	0.4		0911	0.2		
	1617	1.1		1453	1.3		1623	1.3		1538	1.4		1536	1.4		1454	1.5		
	2145	-0.1		2115	0.1		2300	-0.1		2217	0.1		2145	-0.1		2115	0.0		
04	0454	1.3	19	0415	1.4	04	0434	1.3	19	0445	1.4	04	0334	1.4	19	0343	1.4		
	0958	0.6		1002	0.3		1009	0.5		1039	0.3		0924	0.3		0941	0.1		
	1634	1.1		1517	1.3		1638	1.2		1604	1.4		1553	1.4		1521	1.5		
	2238	-0.1		2154	0.1		2347	0.0		2300	0.1		2226	0.0		2154	0.1		
05	0508	1.3	20	0449	1.4	05	0454	1.3	20	0508	1.3	05	0353	1.3	20	0402	1.3		
	1013	0.7		1034	0.4		1028	0.5		1109	0.3		0947	0.3		1011	0.2		
	1649	1.0		1545	1.3		1656	1.2		1636	1.3		1608	1.4		1551	1.5		
	2328	0.0		2239	0.1					2343	0.3		2308	0.1		2230	0.2		
06	0513	1.2	21	0519	1.3	06	0032	0.2	21	0538	1.1	06	0409	1.3	21	0423	1.2		
	1036	0.7		1104	0.4		0517	1.2		1149	0.4		1002	0.3		1049	0.2		
	1700	1.0		1613	1.3		1041	0.5		1708	1.2		1634	1.3		1617	1.4		
				2328	0.2		1717	1.1					2354	0.3		2308	0.4		
07	0017	0.1	22	0554	1.3	07	0115	0.3	22	0030	0.4	07	0438	1.3	22	0445	1.1		
	0536	1.1		1139	0.4		0549	1.2		0604	1.0		1015	0.4		1132	0.3		
	1053	0.7		1653	1.2		1054	0.5		1238	0.5		1700	1.2		1653	1.3		
	1713	1.0					1749	1.0		1747	1.1					2349	0.6		
08	0106	0.1	23	0015	0.2	08	0206	0.5	23	0128	0.6	08	0043	0.4	23	0451	0.9		
	0602	1.1		0632	1.1		0619	1.1		0628	0.8		0504	1.2		1228	0.4		
	1102	0.6		1215	0.5		1123	0.5		1351	0.5		1021	0.4		1726	1.1		
	1745	1.0		1730	1.1		1836	0.9		1841	1.0		1730	1.1					
							2113	0.9		2154	0.9								
							2317	0.9		2343	0.9								
09	0156	0.2	24	0106	0.3	09	0304	0.6	24	0308	0.8	09	0138	0.6	24	0038	0.8		
	0638	1.1		0719	1.0		0700	1.0		0404	0.8		0538	1.1		0343	0.9		
	1123	0.6		1306	0.5		1445	0.6		0721	0.7		1032	0.5		0856	0.6		
	2145	1.0		1836	1.0					1154	0.8		1804	1.0		1038	0.7		
										1519	0.5		2117	0.8		1349	0.5		
													2336	0.9		1813	0.9		
																2058	0.8		
10	0247	0.3	25	0202	0.5	10	0009	1.0	25	0058	1.1	10	0239	0.7	25	0026	1.0		
	0715	1.0		0826	0.9		0409	0.6		0753	0.6		0608	1.0		0743	0.6		
	1221	0.7		1415	0.6		0800	0.9		1251	0.9		1153	0.6		1143	0.8		
	2254	1.0		2100	1.0		1623	0.6		1656	0.4		1413	0.6		1509	0.5		
													1900	0.8					
													2034	0.8					
11	0339	0.4	26	0311	0.6	11	0053	1.1	26	0145	1.2	11	0011	1.0	26	0106	1.2		
	0806	1.0		1013	0.9		0523	0.6		0817	0.5		0354	0.7		0745	0.5		
	1549	0.6		1553	0.6		1234	0.9		1330	1.1		0700	0.8		1223	1.0		
	2349	1.1		2353	1.0		1747	0.5		1804	0.3		1008	0.7		1636	0.4		
													1154	0.8					
													1545	0.6					
12	0438	0.5	27	0704	0.6	12	0124	1.2	27	0217	1.4	12	0049	1.1	27	0139	1.3		
	0926	0.9		1245	0.9		0632	0.5		0851	0.4		0523	0.6		0800	0.4		
	1719	0.5		1713	0.4		1304	1.1		1402	1.2		1215	0.9		1258	1.1		
							1839	0.3		1856	0.1		1708	0.5		1741	0.2		
13	0034	1.1	28	0123	1.2	13	0158	1.3	28	0253	1.4	13	0113	1.2	28	0202	1.4		
	0539	0.5		0804	0.5		0723	0.4		0911	0.4		0634	0.5		0823	0.4		
	1211	1.0		1341	1.0		1338	1.2		1436	1.3		1247	1.0		1332	1.3		
	1815	0.4		1817	0.3		1919	0.2		1939	-0.1		1826	0.4		1832	0.1		
14	0117	1.2	29	0217	1.3	14	0230	1.4				14	0143	1.4	29	0223	1.4		
	0639	0.4		0853	0.4		0802	0.3					0715	0.4		0841	0.4		



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PORTO DE SANTOS - TORRE GRANDE

2022

LATITUDE 23 57.0 S			LONGITUDE 46 18.5 W			FUSO + 3 HORAS											
PORTO DE SANTOS			NIVEL MEDIO .77 M			CARTA 1701											
ABRIL			MAIO			JUNHO											
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA		DIA		DIA		DIA		DIA		DIA							
H M	M	H M	M	H M	M	H M	M	H M	M	H M	M						
01	0238	1.4	16	0247	1.4	01	0217	1.4	16	0241	1.3	01	0253	1.3	16	0338	1.0
	0836	0.3		0841	0.1		0834	0.2		0853	0.0		0932	0.2		1023	0.0
	1500	1.5		1432	1.5		1502	1.5		1458	1.5		1608	1.4		1730	1.3
	2113	-0.1		2056	0.1		2130	0.2		2123	0.3		2230	0.4		2226	0.7
02	0253	1.4	17	0306	1.4	02	0243	1.4	17	0302	1.2	02	0315	1.3	17	0356	1.0
	0858	0.2		0913	0.1		0902	0.2		0938	0.1		1026	0.2		1123	0.0
	1521	1.5		1504	1.5		1536	1.4		1539	1.4		1651	1.3		1753	1.2
	2156	0.1		2132	0.2		2209	0.3		2200	0.5		2306	0.5		2251	0.8
03	0309	1.4	18	0324	1.3	03	0306	1.3	18	0319	1.1	03	0345	1.2	18	0341	0.9
	0919	0.2		0951	0.1		0932	0.2		1030	0.1		1128	0.3		0615	0.9
	1549	1.4		1536	1.5		1606	1.4		1626	1.3		1728	1.2		1221	0.1
	2239	0.2		2209	0.3		2253	0.4		2232	0.6		2347	0.6		1813	1.1
																2302	0.8
04	0336	1.4	19	0347	1.2	04	0334	1.3	19	0330	1.0	04	0409	1.1	19	0213	0.9
	0939	0.3		1036	0.2		1017	0.3		1132	0.2		1221	0.3		0613	0.8
	1613	1.4		1609	1.4		1645	1.3		1715	1.1		1815	1.2		0843	0.9
	2319	0.4		2245	0.5		2336	0.5		2258	0.8					1315	0.1
																1838	1.1
																2308	0.8
05	0400	1.3	20	0358	1.0	05	0400	1.2	20	0221	0.9	05	0028	0.6	20	0241	1.0
	0947	0.3		1130	0.3		1136	0.4		0700	0.7		0443	1.0		0611	0.8
	1649	1.3		1649	1.2		1721	1.2		0821	0.7		1306	0.4		0939	1.0
				2309	0.7					1238	0.2		1915	1.1		1406	0.2
										1809	1.0					1909	1.0
										2306	0.9					2308	0.8
06	0004	0.5	21	0332	0.9	06	0021	0.6	21	0154	1.0	06	0119	0.7	21	0302	0.9
	0426	1.2		1238	0.3		0426	1.1		0641	0.7		0513	0.9		0623	0.8
	0953	0.4		1732	1.0		1245	0.4		0936	0.8		1353	0.4		1024	1.0
	1719	1.1		2109	0.9		1808	1.1		1341	0.2		2041	1.0		1458	0.3
										1915	0.9					1953	1.0
										2100	0.9					2326	0.8
07	0100	0.6	22	0215	1.0	07	0115	0.7	22	0156	1.0	07	0238	0.7	22	0315	0.8
	0458	1.1		0732	0.6		0458	1.0		0636	0.6		0936	0.9		0641	0.7
	1015	0.5		1009	0.7		1339	0.4		1023	0.9		1439	0.4		1106	1.1
	1247	0.5		1351	0.4		1930	1.0		1439	0.2		2224	1.1		1549	0.3
	1800	1.0		1839	0.9		2241	0.9								2045	0.9
	2113	0.8		2013	0.9												
	2311	0.9															
08	0202	0.7	23	0113	1.1	08	0239	0.8	23	0134	1.0	08	0523	0.7	23	0054	0.8
	0528	1.0		0708	0.6		0523	0.8		0649	0.6		1030	1.0		0649	0.6
	1400	0.5		1102	0.9		1424	0.4		1102	1.1		1530	0.4		1143	1.1
	1902	0.9		1500	0.4		2330	1.0		1534	0.2		2336	1.1		1641	0.4
	2039	0.8														2200	0.9
	2356	1.0															
09	0326	0.7	24	0104	1.2	09	0545	0.7	24	0108	1.0	09	0549	0.5	24	0634	0.5
	0606	0.8		0713	0.5		1043	0.9		0702	0.5		1113	1.1		1221	1.2
	0923	0.7		1147	1.0		1515	0.4		1138	1.2		1632	0.4		1736	0.4
	1104	0.8		1608	0.3					1626	0.2						
	1502	0.5															
10	0021	1.1	25	0119	1.2	10	0002	1.2	25	0104	1.0	10	0026	1.2	25	0004	1.0
	0536	0.7		0734	0.4		0615	0.6		0715	0.5		0615	0.4		0636	0.4
	1138	0.9		1217	1.2		1119	1.0		1208	1.2		1154	1.2		1302	1.2
	1608	0.5		1708	0.2		1613	0.4		1717	0.2		1743	0.3		1832	0.4
11	0051	1.2	26	0139	1.2	11	0038	1.3	26	0038	1.0	11	0109	1.2	26	0058	1.1
	0634	0.5		0753	0.4		0638	0.4		0719	0.4		0641	0.3		0702	0.3
	1206	1.0		1249	1.3		1153	1.2		1238	1.3		1238	1.3		1343	1.3
	1717	0.4		1800	0.1		1717	0.3		1808	0.2		1917	0.3		1924	0.4
12	0113	1.3	27	0145	1.2	12	0106	1.3	27	0041	1.1	12	0143	1.2	27	0134	1.2
	0702	0.4		0756	0.4		0656	0.3		0708	0.4		0715	0.1		0734	0.2
	1238	1.2		1315	1.4		1226	1.3		1309	1.3		1332	1.4		1423	1.3
	1824	0.3		1845	0.0		1823	0.2		1858	0.2		2017	0.3		2011	0.4
13	0141	1.4	28	0139	1.2	13	0132	1.4	28	0108	1.2	13	0221	1.2	28	0202	1.2
	0728	0.3		0745	0.3		0717	0.2		0719	0.3		0756	0.0		0808	0.1



	1306	1.3		1339	1.4		1302	1.4		1343	1.4		1438	1.4		1502	1.4
	1909	0.2		1926	0.0		1919	0.2		1945	0.2		2051	0.4		2058	0.3
14	0206	1.5	29	0141	1.3	14	0156	1.4	29	0134	1.2	14	0247	1.2	29	0228	1.3
	0751	0.2		0747	0.3		0743	0.1		0747	0.2		0839	0.0		0843	0.1
	1336	1.4		1406	1.5		1338	1.5		1417	1.4		1549	1.4		1539	1.4
	1938	0.1		2008	0.0		2006	0.2		2028	0.3		2130	0.4		2136	0.3
15	0228	1.5	30	0158	1.3	15	0221	1.3	30	0200	1.3	15	0317	1.1	30	0253	1.3
	0815	0.1		0806	0.2		0813	0.1		0817	0.2		0928	0.0		0923	0.1
	1404	1.5		1432	1.5		1417	1.5		1456	1.4		1647	1.4		1613	1.4
	2019	0.0		2051	0.1		2043	0.2		2109	0.3		2206	0.6		2209	0.3
									31	0226	1.3						
										0853	0.2						
										1532	1.4						
										2153	0.3						

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PORTO DE SANTOS - TORRE GRANDE

2022

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
JULHO						AGOSTO						SETEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0313	1.3	16	0434	1.1	01	0402	1.4	16	0432	1.2	01	0445	1.3	16	0502	1.1
	1008	0.2		1102	-0.1		1102	0.2		1206	0.2		1151	0.4		0902	0.7
	1649	1.4		1723	1.3		1728	1.3		1704	1.2		1738	1.1		1015	0.8
	2247	0.4		2228	0.6		2317	0.4		2230	0.4					1309	0.6
																1711	1.1
																2211	0.4
02	0339	1.3	17	0443	1.1	02	0428	1.3	17	0453	1.2	02	0002	0.4	17	0539	1.0
	1049	0.2		1156	0.0		1147	0.2		1256	0.3		0513	1.2		0858	0.8
	1723	1.3		1732	1.2		1800	1.2		1728	1.2		1247	0.6		1123	0.9
	2315	0.4		2247	0.6		2351	0.4		2234	0.4		1754	0.9		1409	0.7
																1747	1.0
																2219	0.6
03	0406	1.2	18	0451	1.1	03	0502	1.2	18	0511	1.1	03	0102	0.5	18	0011	0.6
	1141	0.2		1245	0.1		1236	0.3		1349	0.5		0556	1.0		0154	0.6
	1800	1.3		1753	1.1		1834	1.1		1756	1.1		1004	0.8		0619	0.8
	2349	0.5		2256	0.6					2245	0.5		1404	0.8		0839	0.8
													1647	0.8		1204	1.0
													2158	0.7		1521	0.7
													2328	0.7		1821	0.9
																2208	0.7
04	0439	1.1	19	0439	1.0	04	0028	0.5	19	0543	0.9	04	0241	0.6	19	0000	0.7
	1228	0.3		1332	0.2		0539	1.1		0902	0.8		1232	1.0		0341	0.6
	1843	1.2		1815	1.1		1326	0.4		1119	0.9		1951	0.6		1239	1.1
				2304	0.6		1915	1.0		1443	0.6					1651	0.7
										1826	1.0					2041	0.8
										2300	0.6						
05	0024	0.6	20	0438	1.0	05	0128	0.6	20	0634	0.8	05	0034	0.9	20	0009	0.9
	0513	1.1		0806	0.9		0649	1.0		0800	0.8		0421	0.5		0528	0.5
	1313	0.3		0949	0.9		1428	0.6		1209	1.0		1317	1.2		1302	1.2
	1932	1.1		1417	0.4		2030	0.9		1547	0.7		2006	0.5		1809	0.6
				1847	1.0					1904	0.9						
				2317	0.6					2258	0.7						
06	0111	0.6	21	0502	0.9	06	0300	0.6	21	0045	0.7	06	0109	1.0	21	0038	1.0
	0641	1.0		0647	0.8		1121	1.0		0417	0.6		0543	0.3		0632	0.3
	1402	0.4		1058	1.0		1556	0.7		1253	1.1		1358	1.3		1326	1.3
	2036	1.0		1508	0.5		1736	0.7		1658	0.7		2036	0.4		1858	0.4
				1919	1.0		1900	0.7		2017	0.8						
				2345	0.6					2153	0.8						
07	0224	0.6	22	1154	1.0	07	0038	0.9	22	0047	0.9	07	0149	1.2	22	0102	1.2
	0932	1.0		1604	0.5		0445	0.5		0606	0.5		0636	0.1		0706	0.2
	1458	0.4		2008	0.9		1256	1.1		1321	1.2		1432	1.4		1354	1.4
	2200	1.0					2000	0.5		1809	0.6		2100	0.4		1934	0.3
08	0402	0.6	23	0530	0.6	08	0126	1.0	23	0104	1.0	08	0219	1.3	23	0130	1.3
	1039	1.1		1241	1.1		0558	0.3		0645	0.3		0717	-0.1		0728	0.1
	1602	0.5		1708	0.6		1358	1.3		1351	1.3		1458	1.5		1417	1.5
	2353	1.0					2045	0.5		1908	0.5		2119	0.4		2004	0.2
09	0523	0.5	24	0041	0.9	09	0206	1.1	24	0132	1.2	09	0249	1.4	24	0154	1.4
	1141	1.1		0619	0.4		0649	0.1		0719	0.2		0800	-0.2		0745	0.0
	1913	0.5		1319	1.2		1447	1.4		1417	1.4		1519	1.5		1443	1.5
				1813	0.5		2115	0.4		1951	0.4		2126	0.4		2032	0.2
10	0115	1.1	25	0111	1.0	10	0245	1.2	25	0156	1.3	10	0311	1.5	25	0217	1.5
	0613	0.3		0653	0.3		0734	0.0		0743	0.1		0839	-0.2		0817	0.0
	1317	1.2		1356	1.3		1523	1.5		1447	1.5		1526	1.4		1502	1.5
	2019	0.5		1913	0.5		2147	0.4		2026	0.3		2113	0.4		2058	0.1
11	0202	1.1	26	0143	1.2	11	0315	1.3	26	0221	1.4	11	0323	1.5	26	0241	1.6
	0700	0.1		0726	0.2		0817	-0.2		0813	0.0		0919	-0.2		0845	0.0
	1432	1.3		1430	1.4		1556	1.5		1511	1.5		1526	1.4		1521	1.5
	2102	0.4		2002	0.4		2202	0.4		2058	0.2		2119	0.3		2124	0.1
12	0245	1.2	27	0208	1.3	12	0343	1.4	27	0243	1.4	12	0336	1.5	27	0304	1.6
	0743	0.0		0758	0.1		0902	-0.2		0838	0.0		1000	-0.1		0921	0.1
	1528	1.4		1502	1.4		1619	1.5		1538	1.5		1539	1.3		1541	1.4
	2143	0.4		2043	0.3		2147	0.5		2126	0.2		2139	0.3		2156	0.1
13	0326	1.2	28	0234	1.3	13	0402	1.3	28	0302	1.5	13	0353	1.4	28	0330	1.5

	0828	-0.1		0830	0.1		0949	-0.2		0911	0.0		1045	0.1		0956	0.2
	1613	1.5		1534	1.5		1626	1.4		1600	1.5		1558	1.3		1602	1.3
	2211	0.5		2117	0.3		2153	0.5		2154	0.2		2154	0.3		2228	0.2
14	0356	1.2	29	0254	1.4	14	0409	1.3	29	0323	1.5	14	0409	1.4	29	0400	1.5
	0917	-0.1		0904	0.1		1034	-0.1		0945	0.0		1128	0.3		1030	0.3
	1651	1.4		1602	1.5		1628	1.3		1621	1.4		1619	1.3		1623	1.2
	2217	0.5		2153	0.3		2204	0.4		2223	0.2		2206	0.3		2306	0.2
15	0426	1.2	30	0313	1.4	15	0415	1.3	30	0349	1.5	15	0438	1.3	30	0428	1.3
	1009	-0.1		0936	0.1		1119	0.0		1024	0.1		1215	0.4		1104	0.5
	1715	1.4		1632	1.4		1645	1.3		1647	1.3		1647	1.2		1641	1.0
	2215	0.6		2221	0.3		2219	0.4		2253	0.2		2206	0.4		2357	0.3
			31	0336	1.4				31	0413	1.4						
				1017	0.1					1106	0.3						
				1700	1.4					1709	1.2						
				2251	0.3					2323	0.3						

2022

PORTO DE SANTOS - TORRE GRANDE

2022

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
OUTUBRO						NOVEMBRO						DEZEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0502	1.2	16	0030	0.5	01	0228	0.4	16	0217	0.4	01	0308	0.2	16	0217	0.4
	1138	0.7		0541	1.0		1243	1.1		1100	1.0		1253	1.0		0938	1.0
	1609	0.9		0856	0.8		1900	0.5		1530	0.7		1849	0.6		1513	0.7
				1100	0.9		2317	1.0		2204	0.9		2319	1.1		2153	1.0
				1345	0.7												
				1709	1.0												
02	0104	0.4	17	0151	0.5	02	0345	0.3	17	0309	0.4	02	0406	0.2	17	0308	0.4
	0547	1.0		0641	0.9		1258	1.2		1138	1.1		1245	1.0		1056	1.1
	0856	0.8		0836	0.8		1913	0.5		1724	0.6		1904	0.6		1634	0.6
	1213	0.9		1141	1.0		2358	1.1		2256	1.0		2358	1.2		2247	1.1
	2000	0.6		1458	0.8												
	2306	0.8		1753	0.9												
				2253	0.7												
03	0236	0.5	18	0300	0.5	03	0449	0.2	18	0406	0.4	03	0500	0.2	18	0408	0.4
	1249	1.1		1204	1.1		1311	1.2		1208	1.2		1143	1.0		1151	1.1
	1930	0.5		1632	0.7		1938	0.4		1806	0.5		1915	0.5		1730	0.5
				2319	0.9					2336	1.1					2334	1.2
04	0000	0.9	19	0415	0.5	04	0034	1.3	19	0509	0.3	04	0032	1.3	19	0519	0.4
	0406	0.4		1230	1.2		0541	0.1		1239	1.3		0553	0.2		1236	1.2
	1311	1.2		1802	0.6		1324	1.2		1832	0.4		1213	1.1		1811	0.3
	1949	0.4		2353	1.0		1953	0.4					1906	0.4			
05	0041	1.1	20	0536	0.4	05	0104	1.4	20	0011	1.3	05	0106	1.3	20	0024	1.3
	0523	0.2		1254	1.3		0623	0.0		0611	0.3		0638	0.2		0634	0.4
	1343	1.3		1839	0.4		1323	1.2		1308	1.3		1243	1.1		1321	1.2
	2006	0.4					1951	0.4		1854	0.3		1909	0.3		1851	0.2
06	0113	1.3	21	0021	1.2	06	0132	1.4	21	0047	1.4	06	0138	1.3	21	0121	1.3
	0613	0.1		0632	0.3		0706	0.0		0647	0.2		0721	0.2		0736	0.3
	1402	1.4		1319	1.4		1324	1.2		1334	1.3		1315	1.2		1354	1.2
	2028	0.4		1908	0.3		1941	0.3		1923	0.2		1936	0.2		1932	0.1
07	0145	1.4	22	0053	1.3	07	0156	1.4	22	0123	1.5	07	0211	1.4	22	0223	1.4
	0656	-0.1		0649	0.2		0747	0.0		0732	0.2		0804	0.3		0828	0.4
	1419	1.4		1345	1.4		1341	1.3		1358	1.3		1349	1.2		1432	1.2
	2039	0.3		1934	0.2		2000	0.2		1954	0.1		2011	0.2		2017	0.0
08	0211	1.5	23	0121	1.4	08	0219	1.5	23	0202	1.5	08	0247	1.4	23	0324	1.4
	0734	-0.1		0723	0.1		0824	0.1		0815	0.2		0849	0.3		0911	0.4
	1424	1.4		1406	1.4		1402	1.3		1421	1.3		1415	1.3		1515	1.1
	2030	0.3		1958	0.2		2024	0.2		2032	0.0		2051	0.2		2106	0.0
09	0230	1.5	24	0149	1.5	09	0249	1.4	24	0239	1.5	09	0319	1.4	24	0417	1.4
	0811	-0.1		0749	0.1		0904	0.2		0853	0.3		0926	0.3		0938	0.5
	1424	1.3		1426	1.4		1426	1.3		1445	1.2		1445	1.3		1538	1.1
	2030	0.3		2024	0.1		2058	0.2		2115	0.0		2138	0.2		2200	0.0
10	0249	1.5	25	0217	1.6	10	0315	1.4	25	0323	1.4	10	0356	1.3	25	0500	1.3
	0853	-0.1		0824	0.1		0947	0.3		0930	0.4		1006	0.4		1009	0.6
	1439	1.3		1445	1.4		1454	1.3		1506	1.1		1509	1.3		1617	1.0
	2051	0.2		2056	0.1		2136	0.2		2206	0.1		2230	0.2		2258	0.0
11	0306	1.5	26	0247	1.6	11	0353	1.4	26	0409	1.3	11	0432	1.3	26	0536	1.3
	0932	0.0		0902	0.2		1028	0.4		1006	0.6		1051	0.5		1032	0.7
	1458	1.3		1504	1.3		1517	1.3		1524	1.0		1539	1.2		1836	1.0
	2111	0.2		2132	0.1		2228	0.3		2302	0.1		2324	0.3		2354	0.0
12	0328	1.5	27	0317	1.5	12	0424	1.3	27	0500	1.2	12	0508	1.3	27	0602	1.2
	1009	0.2		0938	0.3		1109	0.5		1039	0.7		1130	0.5		1056	0.8
	1517	1.3		1524	1.2		1549	1.2		1515	0.9		1609	1.2		1645	0.9
	2138	0.3		2211	0.1		2334	0.3								1954	1.0
13	0358	1.4	28	0353	1.4	13	0504	1.2	28	0004	0.2	13	0011	0.3	28	0051	0.1
	1056	0.4		1009	0.5		1200	0.6		0558	1.1		0554	1.2		0626	1.1
	1545	1.3		1549	1.1		1615	1.1		1102	0.9		1211	0.6		1106	0.8
	2154	0.3		2302	0.2					1351	0.9		1645	1.1		1438	0.9
										1819	0.7					1738	0.9
										2051	0.8					2100	1.0
14	0424	1.3	29	0426	1.3	14	0036	0.4	29	0106	0.2	14	0054	0.3	29	0143	0.2
	1145	0.5		1043	0.7		0553	1.1		0717	1.0		0645	1.1		0658	1.0
	1609	1.2		1549	1.0		1258	0.7		1109	0.9		1302	0.6		1117	0.8
	2215	0.4					1653	1.0		1354	1.0		1726	1.0		1502	0.9



2022

CANANEIA - BASE SUL DO IOUSP

2022

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		
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0138	1.4	16	0245	1.4	01	0317	1.5	16	0339	1.6	01	0223	1.5	16	0239	1.6
	1013	0.4		0821	0.4		1147	0.6		0908	0.3		1017	0.5		0824	0.2
	1449	1.3		1423	1.3		1606	1.4		1526	1.4		1506	1.4		1426	1.4
	2043	0.1		2013	0.2		2153	0.0		2119	0.0		2058	-0.1		2038	0.0
02	0236	1.5	17	0321	1.5	02	0400	1.5	17	0409	1.6	02	0300	1.5	17	0308	1.6
	1117	0.5		0853	0.4		0832	0.6		0930	0.3		0823	0.6		0845	0.2
	1538	1.3		1500	1.3		1111	0.8		1558	1.4		1549	1.5		1502	1.5
	2124	0.1		2051	0.1		1239	0.7		2151	0.0		2124	0.0		2104	0.0
							1653	1.4									
							2221	0.0									
03	0326	1.5	18	0400	1.5	03	0441	1.5	18	0447	1.6	03	0339	1.5	18	0345	1.6
	0813	0.8		0919	0.4		0900	0.4		0954	0.2		0819	0.4		0904	0.2
	0909	0.8		1538	1.3		1349	0.9		1630	1.4		1623	1.5		1538	1.5
	1221	0.6		2124	0.1		1732	1.3		2215	0.1		2151	0.0		2128	0.0
	1623	1.3					2249	0.1									
	2202	0.1															
04	0415	1.5	19	0438	1.5	04	0515	1.4	19	0519	1.5	04	0411	1.5	19	0415	1.6
	0832	0.7		0947	0.4		0938	0.3		1015	0.2		0851	0.3		0924	0.2
	1100	0.9		1609	1.3		1338	1.0		1658	1.4		1700	1.4		1608	1.5
	1332	0.7		2200	0.1		1502	1.0		2243	0.2		2211	0.1		2151	0.1
	1709	1.2					1809	1.2									
	2239	0.1					2313	0.2									
05	0500	1.5	20	0509	1.5	05	0554	1.3	20	0558	1.4	05	0449	1.4	20	0454	1.5
	0904	0.6		1011	0.4		1009	0.3		1045	0.3		0919	0.2		0951	0.2
	1211	1.0		1641	1.3		1417	1.1		1732	1.3		1738	1.3		1643	1.5
	1445	0.8		2238	0.1		1623	1.0		2302	0.3		2236	0.2		2206	0.2
	1800	1.2					1856	1.1									
	2315	0.1					2345	0.3									
06	0543	1.4	21	0549	1.5	06	0630	1.2	21	0641	1.3	06	0519	1.3	21	0536	1.3
	0947	0.5		1039	0.4		1053	0.2		1109	0.3		0958	0.1		1015	0.2
	1311	1.1		1713	1.3		1500	1.1		1811	1.3		1809	1.2		1719	1.4
	1558	0.9		2309	0.2		1738	1.0		2317	0.4		2300	0.3		2217	0.4
	1853	1.1					1947	1.0									
	2354	0.2															
07	0621	1.3	22	0623	1.4	07	0015	0.4	22	0732	1.1	07	0553	1.2	22	0619	1.1
	1021	0.4		1108	0.4		0706	1.1		1147	0.4		1032	0.2		1049	0.3
	1406	1.2		1751	1.2		1128	0.3		1906	1.2		1509	1.1		1800	1.3
	1704	0.9		2347	0.3		1538	1.1		2338	0.6		1621	1.0		2236	0.5
	1947	1.1					1824	0.9					1851	1.1			
							2051	1.0					2323	0.4			
08	0036	0.3	23	0704	1.3	08	0100	0.6	23	0243	0.8	08	0626	1.1	23	0158	0.9
	0702	1.2		1141	0.4		0754	1.0		0521	0.7		1104	0.3		0424	0.7
	1102	0.4		1841	1.2		1209	0.4		0841	0.9		1532	1.0		0717	0.9
	1456	1.2					1608	1.0		1219	0.5		1724	1.0		1119	0.4
	1802	0.8					1900	0.8		2021	1.1		1941	1.0		1856	1.2
	2049	1.0					2200	1.0					2354	0.6		2256	0.6
09	0124	0.4	24	0015	0.4	09	0209	0.7	24	0000	0.7	09	0709	1.0	24	0209	1.1
	0749	1.1		0758	1.2		0856	1.0		0256	1.0		1145	0.4		0547	0.6
	1151	0.4		1213	0.5		1300	0.5		0636	0.5		1556	0.9		0839	0.8
	1541	1.1		1947	1.1		1638	0.8		1002	0.9		1804	0.9		1204	0.5
	1853	0.8					1915	0.7		1319	0.7		2054	1.0		2002	1.1
	2153	1.0					2315	1.0		1508	0.7					2313	0.8
										1736	0.6						
										2151	1.1						
10	0228	0.5	25	0047	0.5	10	0602	0.7	25	0026	0.9	10	0021	0.8	25	0238	1.2
	0839	1.0		0302	0.6		1009	0.9		0311	1.1		0321	0.9		0641	0.4
	1241	0.5		0424	0.6		1421	0.6		0730	0.4		0556	0.8		1011	0.8
	1617	1.0		0858	1.1		1643	0.7		1141	0.9		0821	0.9		1704	0.6
	1921	0.7		1302	0.6		1926	0.6		1828	0.4		1224	0.5		2128	1.0
	2254	1.1		2058	1.1					2323	1.1		1606	0.8		2345	0.9
													1832	0.7			
													2226	1.0			
11	0351	0.6	26	0113	0.7	11	0019	1.1	26	0104	1.1	11	0630	0.7	26	0300	1.3

0939	1.0	0254	0.7	0651	0.6	0332	1.2	0951	0.9	0724	0.4
1347	0.6	0604	0.5	1130	1.0	0817	0.3	1336	0.7	1141	1.0
1700	0.8	1011	1.0	1930	0.5	1254	1.1	1554	0.7	1800	0.4
1947	0.7	1745	0.6			1909	0.2	1849	0.6		
2351	1.1	2208	1.1								
12 0513	0.6	27 0202	0.8	12 0109	1.3	27 0054	1.2	12 0013	1.1	27 0317	1.2
1051	1.0	0300	0.9	0723	0.5	0902	0.3	0658	0.6	0804	0.3
1538	0.6	0717	0.4	1236	1.1	1345	1.2	1109	0.9	1238	1.1
1726	0.7	1139	1.0	1936	0.3	1951	0.1	1902	0.4	1847	0.2
1949	0.6	1838	0.5								
		2321	1.2								
13 0038	1.2	28 0819	0.4	13 0153	1.4	28 0145	1.4	13 0102	1.3	28 0121	1.2
0615	0.5	1254	1.1	0754	0.4	0945	0.4	0719	0.5	0841	0.3
1158	1.1	1921	0.3	1328	1.2	1426	1.4	1217	1.1	1321	1.3
1849	0.5			1956	0.2	2024	0.0	1923	0.3	1923	0.1
14 0119	1.3	29 0036	1.3	14 0228	1.5			14 0136	1.4	29 0130	1.3
0704	0.5	0913	0.3	0821	0.4			0743	0.4	0908	0.4
1254	1.2	1354	1.2	1409	1.3			1306	1.2	1402	1.4
1908	0.4	2002	0.2	2021	0.1			1945	0.2	1956	0.0
15 0202	1.4	30 0139	1.4	15 0304	1.5			15 0206	1.5	30 0202	1.4
0745	0.4	1006	0.4	0847	0.3			0804	0.3	0915	0.5
1341	1.2	1443	1.3	1451	1.4			1349	1.3	1443	1.5
1939	0.2	2043	0.0	2051	0.1			2009	0.1	2024	0.0
		31 0232	1.5							31 0238	1.5
		1056	0.4							0745	0.4
		1524	1.4							1519	1.5
		2119	0.0							2053	0.0

2022

CANANEIA - BASE SUL DO IOUSP

2022

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	
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA	
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M
01	0308	1.5	16	0311	1.6	01	0309	1.4	16	0332	1.4	01	0338	1.3	16	0109	0.6		
	0800	0.3		0836	0.1		0809	0.1		0841	0.1		0904	0.1		0456	1.2		
	1558	1.5		1506	1.5		1606	1.5		1528	1.5		1706	1.4		1021	0.2		
	2113	0.1		2109	0.2		2109	0.2		2058	0.5		2154	0.4		1702	1.5		
																2106	0.7		
																2354	0.9		
02	0343	1.5	17	0353	1.5	02	0341	1.4	17	0413	1.3	02	0354	1.2	17	0239	0.7		
	0830	0.2		0900	0.1		0845	0.1		0913	0.2		0941	0.2		0551	1.1		
	1634	1.5		1549	1.5		1647	1.4		1619	1.5		1747	1.4		1124	0.2		
	2139	0.2		2119	0.3		2138	0.3		2100	0.6		2219	0.5		1751	1.4		
																2141	0.7		
03	0413	1.4	18	0432	1.4	03	0402	1.3	18	0119	0.7	03	0402	1.1	18	0054	1.1		
	0902	0.1		0924	0.1		0915	0.1		0502	1.1		1019	0.3		0400	0.7		
	1706	1.4		1630	1.5		1721	1.4		0954	0.2		1821	1.3		0654	1.0		
	2202	0.2		2130	0.4		2202	0.4		1708	1.5		2251	0.5		1230	0.2		
																1832	1.4		
																2213	0.6		
04	0443	1.3	19	0513	1.2	04	0421	1.2	19	0013	0.9	04	0349	1.1	19	0143	1.2		
	0938	0.1		0958	0.2		0953	0.2		0302	0.7		1108	0.3		0506	0.7		
	1745	1.3		1711	1.4		1800	1.3		0600	1.0		1902	1.3		0802	1.0		
	2224	0.3		2147	0.5		2228	0.5		1047	0.3		2317	0.6		1328	0.3		
																1911	1.3		
																2256	0.6		
05	0506	1.2	20	0100	0.8	05	0409	1.1	20	0100	1.1	05	0334	1.0	20	0226	1.2		
	1008	0.2		0302	0.8		1023	0.3		0423	0.7		1223	0.4		0602	0.6		
	1817	1.2		0606	1.0		1843	1.2		0709	0.9		1949	1.2		0909	1.0		
	2251	0.5		1032	0.3		2256	0.6		1213	0.4		2358	0.7		1417	0.3		
																1800	1.3		
																2202	0.6		
06	0526	1.1	21	0119	1.0	06	0313	1.0	21	0143	1.3	06	0313	0.9	21	0308	1.2		
	1045	0.3		0439	0.7		1104	0.4		0526	0.6		0536	0.9		0649	0.6		
	1900	1.1		0713	0.9		1926	1.2		0836	0.9		0804	0.9		1009	1.1		
	2311	0.6		1117	0.4		2321	0.7		1408	0.4		1423	0.4		1506	0.4		
																1854	1.2		
																2228	0.7		
07	0321	1.0	22	0154	1.2	07	0256	1.0	22	0219	1.3	07	0056	0.8	22	0024	0.6		
	1115	0.4		0545	0.5		1202	0.5		0615	0.5		0243	0.8		0354	1.1		
	1958	1.0		0847	0.8		2023	1.1		0951	1.0		0534	0.7		0717	0.6		
	2339	0.7		1254	0.5		2358	0.8		1517	0.4		0917	1.0		1102	1.1		
																1954	1.1		
																2258	0.8		
08	0258	1.0	23	0221	1.3	08	0234	0.9	23	0300	1.2	08	0549	0.6	23	0139	0.7		
	0611	0.8		0632	0.4		0604	0.7		0658	0.5		1009	1.1		0428	0.9		
	0751	0.8		1009	0.9		0858	0.9		1049	1.1		1651	0.4		0749	0.6		
	1202	0.5		1613	0.5		1600	0.5		1611	0.4		2258	1.2		1153	1.2		
	1553	0.7		2102	1.0		2141	1.1		2136	1.0					1647	0.5		
	1658	0.7		2330	0.9											2304	1.0		
	2115	1.0																	
09	0004	0.9	24	0256	1.3	09	0611	0.6	24	0032	0.9	09	0606	0.5	24	0754	0.6		
	0226	1.0		0709	0.4		1009	1.0		0336	1.1		1058	1.2		1236	1.3		
	0624	0.7		1117	1.0		1702	0.4		0734	0.5		1800	0.4		1743	0.5		
	0928	0.8		1711	0.3		2308	1.2		1138	1.2								
	1456	0.6		2239	1.0														
	1739	0.6																	
	2319	1.1																	
10	0643	0.6	25	0006	1.0	10	0624	0.5	25	0345	0.9	10	0004	1.3	25	0017	1.1		
	1051	0.9		0313	1.2		1102	1.1		0758	0.5		0636	0.3		0613	0.5		
	1811	0.4		0749	0.4		1751	0.3		1219	1.3		1141	1.3		1315	1.3		
																1208	1.2		
																1800	0.3		
11	0032	1.2	26	0013	1.1	11	0009	1.3	26	0006	1.1	11	0100	1.4	26	0109	1.2		
	0658	0.5		0815	0.4		0643	0.4		0804	0.5		0702	0.2		0639	0.3		
	1147	1.1		1253	1.3		1145	1.2		1302	1.4		1224	1.4		1400	1.4		



	1843	0.3		1841	0.2		1836	0.2		1826	0.3		2032	0.4		1932	0.5
12	0104	1.4	27	0058	1.3	12	0053	1.4	27	0058	1.2	12	0149	1.4	27	0153	1.3
	0713	0.3		0834	0.5		0702	0.3		0626	0.4		0734	0.2		0713	0.2
	1232	1.2		1334	1.4		1223	1.3		1345	1.4		1317	1.4		1449	1.4
	1915	0.2		1915	0.2		1921	0.2		1906	0.3		2141	0.4		2013	0.4
13	0134	1.5	28	0134	1.3	13	0130	1.5	28	0138	1.3	13	0234	1.4	28	0226	1.3
	0736	0.3		0719	0.5		0723	0.2		0651	0.3		0808	0.1		0751	0.1
	1309	1.3		1411	1.5		1304	1.4		1424	1.4		1415	1.5		1532	1.4
	1947	0.1		1947	0.2		2006	0.2		1945	0.3		2249	0.4		2053	0.4
14	0204	1.6	29	0206	1.4	14	0208	1.5	29	0211	1.4	14	0315	1.3	29	0258	1.3
	0754	0.2		0711	0.3		0747	0.1		0719	0.2		0845	0.1		0824	0.1
	1349	1.4		1454	1.5		1349	1.5		1506	1.4		1517	1.5		1611	1.5
	2019	0.1		2015	0.2		2049	0.3		2021	0.3		2356	0.5		2123	0.4
15	0239	1.6	30	0241	1.4	15	0251	1.5	30	0245	1.4	15	0404	1.3	30	0324	1.3
	0813	0.1		0739	0.2		0811	0.1		0756	0.1		0928	0.1		0902	0.1
	1428	1.5		1532	1.5		1438	1.5		1551	1.4		1611	1.5		1654	1.5
	2047	0.1		2045	0.2		2126	0.4		2056	0.3		2045	0.7		2153	0.4
													2238	0.8			
									31	0311	1.3						
										0828	0.1						
										1628	1.4						
										2124	0.4						

2022

CANANEIA - BASE SUL DO IOUSP

2022

LATITUDE 25 1.0 S						LONGITUDE 47 55.5 W						FUSO + 3 HORAS							
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703							
JULHO						AGOSTO						SETEMBRO							
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT			
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M
01	0349	1.3	16	0156	0.8	01	0436	1.3	16	0202	1.1	01	0530	1.3	16	0304	1.0		
	0941	0.2		0526	1.2		1049	0.2		0402	1.0		1100	0.4		0524	0.9		
	1728	1.5		1113	0.1		1809	1.5		0628	1.1		1900	1.2		0730	1.0		
	2215	0.4		1734	1.5		2256	0.3		1124	0.3		2324	0.4		1132	0.6		
				2136	0.5					1817	1.3					1854	1.0		
										2232	0.2					2321	0.3		
02	0411	1.2	17	0100	1.0	02	0504	1.2	17	0238	1.2	02	0636	1.2	17	0323	1.0		
	1021	0.2		0319	0.9		1123	0.2		0519	0.9		1119	0.5		0602	0.8		
	1802	1.4		0617	1.1		1847	1.4		0724	1.0		1445	0.8		0853	0.9		
	2245	0.4		1151	0.2		2323	0.4		1158	0.4		1630	0.7		1206	0.7		
				1808	1.4					1854	1.2		1956	1.0		1538	0.9		
				2208	0.4					2306	0.2		2358	0.5		1754	0.9		
																1945	0.9		
03	0430	1.2	18	0153	1.2	03	0551	1.2	18	0308	1.1	03	0758	1.1	18	0000	0.5		
	1109	0.3		0447	0.9		1158	0.3		0609	0.8		1149	0.7		0339	0.8		
	1839	1.4		0717	1.1		1924	1.3		0838	1.0		1449	0.9		0621	0.7		
	2311	0.5		1230	0.3		2354	0.4		1238	0.6		1800	0.6		1013	1.0		
				1849	1.3					1928	1.1		2108	0.9		1306	0.9		
				2249	0.4					2349	0.3					1456	0.9		
																1834	0.8		
																2108	0.9		
04	0506	1.1	19	0236	1.2	04	0711	1.1	19	0343	1.0	04	0039	0.7	19	0056	0.7		
	1206	0.3		0549	0.8		1228	0.5		0651	0.7		0258	0.7		0319	0.7		
	1913	1.4		0824	1.0		2013	1.2		0951	1.0		0513	0.6		0639	0.5		
	2347	0.5		1309	0.4					1326	0.7		0917	1.1		1138	1.1		
				1923	1.2					2013	1.0		1215	0.9		1856	0.7		
				2324	0.4								1504	1.0		2304	0.9		
													1904	0.5					
													2304	0.9					
05	0649	1.0	20	0313	1.2	05	0028	0.6	20	0028	0.5	05	0604	0.4	20	0651	0.4		
	1308	0.4		0634	0.7		0834	1.1		0402	0.9		1043	1.1		1232	1.2		
	1958	1.3		0932	1.0		1302	0.6		0704	0.6		1300	1.0		1911	0.6		
				1356	0.5		1517	0.7		1058	1.0		1528	1.1					
				2002	1.1		1709	0.6		1756	0.8		1958	0.4					
							2121	1.0		2134	0.9								
06	0021	0.6	21	0006	0.4	06	0119	0.7	21	0136	0.7	06	0041	1.0	21	0023	1.1		
	0815	1.0		0354	1.1		0306	0.7		0402	0.7		0649	0.2		0704	0.3		
	1417	0.4		0704	0.7		0528	0.7		0713	0.5		1200	1.2		1311	1.4		
	2053	1.2		1030	1.0		0945	1.1		1158	1.1		1411	1.2		1934	0.5		
				1451	0.6		1338	0.8		1853	0.7		1536	1.2					
				2054	1.0		1523	0.8		2321	0.9		2045	0.3					
							1854	0.6											
							2300	1.0											
07	0119	0.7	22	0100	0.6	07	0613	0.5	22	0717	0.4	07	0126	1.2	22	0104	1.2		
	0453	0.7		0423	0.9		1051	1.2		1249	1.2		0724	0.0		0723	0.1		
	0919	1.1		0732	0.6		1419	0.9		1923	0.6		1306	1.3		1347	1.5		
	1547	0.5		1121	1.1		1547	0.9					2123	0.3		1954	0.4		
	2200	1.2		1600	0.7		2000	0.5											
				2208	1.0														
08	0543	0.6	23	0239	0.7	08	0034	1.1	23	0041	1.1	08	0206	1.4	23	0139	1.4		
	1013	1.2		0445	0.7		0658	0.3		0723	0.3		0800	-0.1		0745	0.1		
	1809	0.5		0743	0.6		1156	1.3		1332	1.3		1358	1.4		1421	1.5		
	2321	1.1		1209	1.2		2058	0.4		1953	0.5		2158	0.4		2011	0.3		
				1736	0.7														
				2347	1.0														
09	0619	0.4	24	0723	0.5	09	0134	1.2	24	0126	1.2	09	0245	1.5	24	0211	1.5		
	1106	1.3		1300	1.3		0739	0.1		0736	0.2		0836	-0.1		0808	0.0		
	1947	0.5		1856	0.6		1302	1.3		1411	1.4		1443	1.5		1456	1.6		
							2147	0.3		2015	0.4		2226	0.5		2034	0.2		
10	0038	1.2	25	0054	1.1	10	0217	1.3	25	0202	1.3	10	0317	1.5	25	0243	1.5		
	0658	0.3		0706	0.3		0815	0.0		0758	0.1		0904	-0.1		0832	0.0		
	1202	1.3		1347	1.3		1406	1.4		1453	1.5		1523	1.5		1530	1.6		
	2056	0.4		1945	0.5		2230	0.4		2041	0.3		2019	0.5		2056	0.2		

11	0136	1.3	26	0139	1.2	11	0300	1.4	26	0236	1.4	11	0356	1.5	26	0311	1.5
	0738	0.2		0724	0.2		0856	-0.1		0823	0.0		0928	0.0		0856	0.0
	1302	1.4		1432	1.4		1500	1.5		1528	1.5		1602	1.5		1604	1.6
	2156	0.4		2021	0.5		2309	0.5		2102	0.3		2038	0.4		2117	0.1
12	0223	1.3	27	0215	1.3	12	0341	1.4	27	0306	1.5	12	0434	1.4	27	0341	1.5
	0817	0.1		0756	0.1		0932	-0.1		0853	0.0		0951	0.1		0917	0.1
	1406	1.4		1513	1.5		1549	1.5		1602	1.6		1641	1.4		1641	1.5
	2251	0.4		2053	0.4		2053	0.7		2123	0.2		2106	0.2		2143	0.1
							2200	0.7									
							2349	0.6									
13	0308	1.3	28	0249	1.4	13	0419	1.4	28	0336	1.5	13	0506	1.4	28	0409	1.5
	0900	0.0		0826	0.1		1006	0.0		0919	0.0		1009	0.2		0939	0.2
	1509	1.5		1556	1.5		1630	1.5		1638	1.6		1713	1.3		1715	1.4
	2343	0.5		2117	0.4		2056	0.5		2147	0.2		2141	0.1		2208	0.2
14	0356	1.3	29	0319	1.4	14	0500	1.4	29	0400	1.5	14	0547	1.2	29	0443	1.4
	0945	0.0		0902	0.1		1032	0.1		0949	0.1		1036	0.3		0958	0.3
	1604	1.5		1632	1.5		1706	1.5		1708	1.5		1751	1.2		1800	1.2
	2154	0.8		2143	0.3		2121	0.4		2208	0.2		2211	0.1		2238	0.2
15	0043	0.6	30	0347	1.4	15	0545	1.3	30	0424	1.4	15	0245	1.1	30	0526	1.3
	0441	1.3		0936	0.1		1100	0.2		1013	0.1		0419	1.0		1013	0.5
	1030	0.0		1704	1.5		1747	1.4		1745	1.5		0628	1.1		1353	0.8
	1653	1.5		2206	0.3		2158	0.3		2232	0.2		1102	0.5		1538	0.8
	2102	0.7											1819	1.1		1851	1.1
	2354	0.9											2251	0.2		2306	0.3
			31	0411	1.3				31	0451	1.4						
				1011	0.1					1039	0.2						
				1739	1.5					1817	1.3						
				2230	0.3					2258	0.3						

2022

CANANEIA - BASE SUL DO IOUSP

2022

LATITUDE 25 1.0 S						LONGITUDE 47 55.5 W						FUSO + 3 HORAS								
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703								
OUTUBRO						NOVEMBRO						DEZEMBRO								
HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		HORA		ALT		
DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0624	1.2	16	0323	0.8	01	0356	0.4	16	0109	0.6	01	0408	0.3	16	0326	0.5			
	1038	0.6		0421	0.8		0841	1.1		0413	0.5		0909	1.1		0924	1.2			
	1358	1.0		0754	1.0		1119	0.9		0923	1.1		1213	0.8		1647	0.7			
	1702	0.7		1126	0.7		1441	1.2		1758	0.7		1528	1.1		2136	1.1			
	1954	0.9		1502	1.0		1851	0.5		2134	0.9		1913	0.6						
	2345	0.5		1804	0.9		2251	1.0					2309	1.1						
				1902	0.9															
				2343	0.5															
02	0741	1.1	17	0311	0.7	02	0500	0.3	17	0504	0.4	02	0504	0.3	17	0449	0.4			
	1100	0.7		0506	0.7		0958	1.1		1038	1.2		1015	1.1		1028	1.2			
	1417	1.1		0909	1.0		1208	1.0		1804	0.6		1332	0.8		1730	0.6			
	1808	0.6		1208	0.9		1508	1.2		2243	1.0		1608	1.0		2230	1.2			
	2117	0.8		1447	0.9		1928	0.4					1953	0.6						
				1819	0.8		2349	1.1												
				2049	0.8															
03	0149	0.7	18	0047	0.6	03	0549	0.2	18	0545	0.3	03	0002	1.2	18	0551	0.4			
	0447	0.6		0241	0.7		1111	1.1		1136	1.3		0549	0.3		1130	1.2			
	0902	1.0		0541	0.5		1354	1.0		1819	0.5		1123	1.1		1806	0.5			
	1136	0.9		1043	1.1		1526	1.1		2330	1.2		1653	0.8		2321	1.3			
	1449	1.2		1834	0.7		2002	0.5					2015	0.6						
	1900	0.4		2228	0.9															
	2311	0.9																		
04	0541	0.3	19	0604	0.4	04	0034	1.3	19	0619	0.2	04	0049	1.3	19	0649	0.4			
	1030	1.1		1151	1.2		0626	0.1		1221	1.4		0624	0.3		1226	1.3			
	1211	1.0		1847	0.6		1211	1.2		1843	0.4		1223	1.2		1845	0.3			
	1508	1.2		2341	1.0		2034	0.5					2017	0.6						
	1947	0.4																		
05	0021	1.1	20	0630	0.3	05	0113	1.4	20	0011	1.3	05	0128	1.4	20	0009	1.4			
	0621	0.2		1234	1.3		0700	0.1		0654	0.2		0656	0.3		0751	0.4			
	1158	1.2		1900	0.5		1300	1.3		1304	1.4		1311	1.2		1317	1.3			
	1354	1.2					2041	0.5		1906	0.3		1824	0.4		1921	0.2			
	1513	1.2																		
	2021	0.4																		
06	0104	1.3	21	0024	1.2	06	0154	1.5	21	0053	1.4	06	0206	1.4	21	0102	1.4			
	0700	0.0		0654	0.2		0728	0.1		0730	0.2		0724	0.3		0856	0.4			
	1253	1.3		1308	1.4		1345	1.3		1347	1.5		1356	1.3		1408	1.3			
	2058	0.4		1917	0.3		1900	0.4		1934	0.2		1906	0.3		2002	0.2			
07	0143	1.4	22	0102	1.3	07	0230	1.5	22	0132	1.5	07	0249	1.4	22	0156	1.5			
	0736	0.0		0719	0.1		0754	0.2		0802	0.2		0758	0.3		1006	0.4			
	1334	1.4		1345	1.5		1423	1.4		1428	1.5		1438	1.3		1500	1.3			
	2121	0.5		1939	0.2		1921	0.3		2004	0.1		1949	0.2		2047	0.1			
08	0217	1.5	23	0136	1.5	08	0306	1.5	23	0213	1.5	08	0324	1.4	23	0251	1.5			
	0804	0.0		0745	0.1		0817	0.2		0821	0.3		0828	0.4		1119	0.5			
	1413	1.4		1417	1.6		1500	1.4		1511	1.4		1511	1.3		1553	1.3			
	2021	0.5		2000	0.2		1958	0.2		2039	0.1		2024	0.1		2132	0.1			
09	0256	1.5	24	0208	1.5	09	0345	1.5	24	0300	1.5	09	0402	1.4	24	0343	1.5			
	0830	0.0		0809	0.1		0845	0.3		0823	0.4		0902	0.4		0824	0.7			
	1454	1.4		1456	1.6		1538	1.3		1600	1.3		1545	1.3		1000	0.7			
	1951	0.4		2024	0.1		2034	0.1		2115	0.1		2102	0.1		1238	0.6			
																1641	1.2			
																2219	0.1			
10	0330	1.5	25	0243	1.6	10	0419	1.4	25	0349	1.5	10	0445	1.4	25	0432	1.5			
	0853	0.1		0830	0.1		0909	0.3		0838	0.5		0934	0.4		0851	0.7			
	1532	1.4		1536	1.5		1608	1.3		1119	0.7		1613	1.2		1115	0.8			
	2013	0.2		2053	0.1		2106	0.1		1241	0.7		2141	0.2		1353	0.7			
										1651	1.2					1730	1.2			
										2156	0.2					2308	0.1			
11	0404	1.5	26	0317	1.6	11	0458	1.4	26	0438	1.5	11	0521	1.4	26	0519	1.5			
	0911	0.2		0849	0.2		0941	0.4		0900	0.6		1004	0.4		0917	0.6			
	1606	1.4		1613	1.4		1638	1.2		1156	0.9		1636	1.2		1219	1.0			
	2051	0.1		2121	0.1		2145	0.2		1411	0.7		2215	0.2		1504	0.8			
										1743	1.1					1821	1.1			
										2245	0.2					2356	0.2			

12	0443	1.4	27	0356	1.5	12	0539	1.3	27	0526	1.4	12	0602	1.3	27	0604	1.4
	0936	0.3		0904	0.3		1008	0.5		0926	0.6		1038	0.5		0958	0.6
	1643	1.3		1700	1.3		1653	1.1		1236	1.0		1649	1.1		1315	1.1
	2121	0.1		2154	0.2		2215	0.2		1538	0.7		2258	0.3		1617	0.8
										1841	1.0					1919	1.1
										2345	0.3						
13	0515	1.3	28	0441	1.4	13	0621	1.2	28	0617	1.3	13	0647	1.3	28	0047	0.3
	1000	0.4		0921	0.4		1043	0.6		1000	0.7		1109	0.6		0653	1.3
	1711	1.2		1254	0.8		1528	1.0		1315	1.1		1730	1.0		1038	0.5
	2158	0.1		1411	0.8		2256	0.3		1649	0.7		2345	0.4		1408	1.2
				1749	1.1					1951	0.9					1723	0.8
				2226	0.2											2021	1.0
14	0556	1.2	29	0528	1.3	14	0711	1.1	29	0121	0.4	14	0734	1.2	29	0143	0.4
	1026	0.5		0947	0.6		1113	0.7		0711	1.2		1153	0.6		0739	1.2
	1741	1.1		1302	1.0		1511	1.0		1041	0.7		1900	1.0		1117	0.5
	2228	0.2		1554	0.7		2341	0.5		1402	1.2					1458	1.2
				1847	1.0					1747	0.6					1819	0.7
				2308	0.4					2100	1.0					2130	1.0
15	0649	1.1	30	0623	1.2	15	0813	1.1	30	0258	0.4	15	0051	0.4	30	0251	0.5
	1058	0.6		1009	0.7		1200	0.8		0808	1.1		0824	1.2		0828	1.1
	1517	1.0		1332	1.1		1500	0.9		1121	0.7		1247	0.7		1204	0.6
	1700	1.0		1702	0.6		1758	0.8		1449	1.2		2024	1.0		1547	1.1
	1806	1.0		1958	0.9		2002	0.9		1836	0.6					1904	0.7
	2302	0.3								2209	1.0					2236	1.1
			31	0015	0.5										31	0409	0.5
				0728	1.1											0924	1.0
				1047	0.8											1302	0.6
				1402	1.2											1628	1.0
				1800	0.5											1945	0.7
				2123	0.9											2335	1.1

2023

UBATUBA - BASE NORTE DO IOUSP

2023

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

IOUSP-BASE NORTE      NIVEL MEDIO .66 M      CARTA 1613

JANEIRO						FEVEREIRO						MARCO					
HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT	HORA		ALT
DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M	DIA	H M	M
01	0451	0.4	16	0358	0.4	01	0130	0.9	16	0108	1.1	01	0045	0.9	16	0008	1.0
	0853	0.7		1139	0.8		0643	0.5		0704	0.5		0556	0.7		0830	0.5
	1049	0.7		1617	0.4		1108	0.8		1308	0.9		0849	0.7		1211	0.8
	1226	0.7		2358	0.9		1843	0.2		1819	0.2		1058	0.7		1700	0.3
	1700	0.5											1208	0.7			
													1719	0.4			
02	0049	0.9	17	0504	0.4	02	0154	1.0	17	0156	1.2	02	0104	1.0	17	0056	1.2
	0554	0.4		1228	0.9		0730	0.5		0749	0.4		0654	0.6		0754	0.5
	1006	0.8		1726	0.3		1208	0.9		1347	0.9		1143	0.8		1254	0.9
	1806	0.4					1926	0.1		1917	0.0		1819	0.3		1808	0.1
03	0124	0.9	18	0102	1.0	03	0209	1.1	18	0238	1.3	03	0128	1.0	18	0136	1.2
	0649	0.4		0619	0.4		0806	0.4		0821	0.4		0723	0.5		0741	0.4
	1111	0.9		1309	0.9		1253	1.0		1413	1.0		1215	0.9		1324	1.0
	1858	0.2		1830	0.2		2006	0.1		2008	-0.1		1904	0.2		1904	0.0
04	0147	1.0	19	0158	1.1	04	0223	1.1	19	0311	1.3	04	0147	1.1	19	0209	1.2
	0738	0.4		0728	0.4		0841	0.4		0854	0.3		0751	0.4		0758	0.4
	1204	0.9		1353	0.9		1330	1.1		1430	1.0		1249	1.0		1351	1.1
	1945	0.2		1928	0.1		2049	0.0		2058	-0.2		1947	0.1		1954	-0.1
05	0154	1.0	20	0247	1.2	05	0238	1.1	20	0345	1.2	05	0158	1.1	20	0245	1.2
	0817	0.4		0823	0.4		0911	0.3		0924	0.3		0813	0.3		0823	0.3
	1253	1.0		1423	0.9		1408	1.1		1430	1.1		1317	1.1		1356	1.1
	2024	0.1		2021	0.0		2126	0.0		2145	-0.2		2024	0.0		2039	-0.1
06	0219	1.1	21	0332	1.2	06	0300	1.2	21	0338	1.1	06	0213	1.2	21	0256	1.1
	0856	0.4		0909	0.4		0943	0.3		0956	0.3		0841	0.3		0853	0.3
	1334	1.0		1438	0.9		1445	1.1		1447	1.2		1353	1.2		1402	1.2
	2104	0.0		2109	-0.1		2202	0.0		2226	-0.1		2102	0.0		2119	-0.1
07	0243	1.1	22	0413	1.2	07	0324	1.1	22	0313	1.0	07	0230	1.2	22	0223	1.0
	0934	0.4		0953	0.4		1009	0.3		1026	0.4		0909	0.2		0923	0.3
	1413	1.1		1441	1.0		1515	1.2		1511	1.2		1421	1.2		1419	1.3
	2145	0.0		2200	-0.1		2243	0.1		2308	0.0		2141	0.0		2202	0.0
08	0317	1.1	23	0449	1.1	08	0353	1.1	23	0334	1.0	08	0254	1.2	23	0232	1.0
	1006	0.4		1028	0.4		1043	0.3		1054	0.4		0941	0.2		0953	0.3
	1456	1.1		1502	1.0		1549	1.2		1547	1.2		1453	1.3		1451	1.3
	2223	0.1		2251	-0.1		2319	0.1		2354	0.2		2213	0.0		2245	0.1
09	0349	1.1	24	0415	1.0	09	0419	1.1	24	0402	1.0	09	0317	1.1	24	0300	1.0
	1039	0.4		1102	0.4		1113	0.4		1123	0.4		1009	0.2		1024	0.3
	1534	1.1		1530	1.1		1615	1.1		1617	1.1		1519	1.2		1521	1.2
	2302	0.1		2338	0.0		2356	0.2					2251	0.1		2321	0.3
10	0421	1.1	25	0409	0.9	10	0447	1.0	25	0038	0.3	10	0343	1.1	25	0330	1.0
	1109	0.4		1136	0.5		1153	0.4		0436	0.9		1045	0.3		1056	0.3
	1608	1.0		1604	1.1		1645	1.1		1158	0.4		1549	1.2		1600	1.1
	2347	0.2								1700	1.0		2321	0.2		2358	0.5
11	0454	1.0	26	0021	0.1	11	0034	0.3	26	0117	0.5	11	0406	1.0	26	0402	1.0
	1149	0.5		0439	0.9		0509	0.9		0506	0.9		1121	0.3		1139	0.3
	1641	1.0		1204	0.5		1238	0.4		0930	0.5		1613	1.1		1639	1.0
				1647	1.1		1713	1.0		1058	0.5		2354	0.3			
										1256	0.5						
										1745	0.9						
										2102	0.7						
										2309	0.7						
12	0028	0.2	27	0109	0.2	12	0113	0.4	27	0206	0.6	12	0424	1.0	27	0039	0.6
	0526	0.9		0508	0.8		0538	0.9		0545	0.8		1204	0.3		0434	0.9
	1228	0.5		1243	0.5		1332	0.4		0958	0.5		1649	1.0		1238	0.4
	1711	1.0		1724	1.0		1754	0.9		1141	0.5					1719	0.8
										1413	0.5					2021	0.7
										1845	0.7					2254	0.8
										2100	0.7						
13	0111	0.3	28	0200	0.4	13	0208	0.5	28	0006	0.8	13	0039	0.5	28	0123	0.7
	0606	0.9		0553	0.8		0602	0.8		0319	0.7		0449	0.9		0458	0.9
	1313	0.5		0921	0.6		0904	0.7		0623	0.8		1302	0.4		1000	0.5
	1751	0.9		1102	0.6		1013	0.7		1024	0.6		1723	0.9		1058	0.5

			1336	0.5		1439	0.4	1200	0.6		1353	0.4			
			1811	0.9		1849	0.8	1553	0.4		1817	0.7			
			2151	0.7		2102	0.8				2009	0.7			
			2306	0.7		2308	0.8				2338	0.8			
14	0200	0.3	29	0300	0.5	14	0317	0.5		14	0143	0.6	29	0236	0.7
	0647	0.8		0636	0.8		0634	0.7			0502	0.8		0504	0.8
	1408	0.5		1002	0.6		0854	0.6			0838	0.6		1013	0.6
	1838	0.9		1156	0.6		1138	0.7			1011	0.6		1132	0.6
				1451	0.5		1554	0.4			1413	0.4		1513	0.4
				1923	0.8						1813	0.8			
				2147	0.7						2006	0.7			
											2315	0.9			
15	0256	0.4	30	0011	0.8	15	0017	0.9		15	0304	0.7	30	0004	0.9
	1034	0.8		0408	0.6		0458	0.6			0509	0.7		0708	0.7
	1509	0.4		0739	0.7		0708	0.6			0826	0.6		1141	0.7
	2000	0.8		1051	0.6		0845	0.6			1124	0.7		1643	0.4
				1215	0.6		1226	0.8			1539	0.4			
				1623	0.5		1709	0.3							
			31	0058	0.9								31	0032	1.0
				0534	0.6									0653	0.6
				0913	0.7									1139	0.8
				1747	0.4									1749	0.3

2023

UBATUBA - BASE NORTE DO IOUSP

2023

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS					
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
ABRIL						MAIO						JUNHO					
HORA			ALT			HORA			ALT			HORA			ALT		
DIA			DIA			DIA			DIA			DIA			DIA		
H	M	M	H	M	M	H	M	M	H	M	M	H	M	M	H	M	M
01	0056	1.0	16	0108	1.2	01	0039	1.0	16	0115	1.0	01	0041	1.0	16	0002	0.9
	0658	0.5		0700	0.4		0617	0.4		0643	0.4		0653	0.2		0743	0.2
	1204	0.9		1256	1.0		1200	1.0		1245	1.0		1238	1.1		1328	1.0
	1838	0.2		1845	0.0		1843	0.2		1906	0.1		1928	0.2		2017	0.3
02	0113	1.1	17	0147	1.1	02	0054	1.1	17	0126	0.9	02	0102	1.0	17	0041	1.0
	0713	0.4		0721	0.4		0651	0.3		0717	0.3		0738	0.1		0824	0.1
	1228	1.0		1317	1.1		1228	1.1		1249	1.1		1313	1.1		1351	1.1
	1915	0.1		1932	0.0		1921	0.1		1954	0.1		2011	0.2		2100	0.4
03	0128	1.1	18	0206	1.1	03	0109	1.1	18	0038	0.9	03	0124	1.0	18	0121	1.0
	0736	0.3		0751	0.3		0726	0.2		0756	0.2		0823	0.1		0904	0.1
	1258	1.1		1321	1.2		1258	1.2		1309	1.1		1351	1.2		1426	1.1
	1956	0.0		2013	0.0		2000	0.1		2038	0.2		2058	0.3		2139	0.4
04	0139	1.1	19	0138	1.0	04	0124	1.1	19	0102	1.0	04	0149	1.0	19	0204	1.1
	0804	0.2		0821	0.3		0804	0.1		0838	0.2		0908	0.0		0947	0.1
	1324	1.2		1330	1.2		1326	1.2		1343	1.1		1430	1.1		1508	1.1
	2034	0.0		2058	0.0		2041	0.1		2115	0.3		2147	0.4		2213	0.4
05	0158	1.2	20	0136	1.0	05	0147	1.1	20	0136	1.0	05	0213	1.0	20	0247	1.1
	0838	0.2		0854	0.2		0843	0.1		0915	0.1		0958	0.0		1026	0.1
	1354	1.3		1358	1.2		1358	1.2		1419	1.1		1513	1.1		1545	1.1
	2108	0.0		2139	0.1		2115	0.2		2154	0.4		2236	0.5		2249	0.5
06	0219	1.2	21	0200	1.0	06	0209	1.1	21	0209	1.1	06	0247	0.9	21	0324	1.0
	0908	0.2		0930	0.2		0923	0.1		0956	0.1		1051	0.0		1106	0.1
	1421	1.3		1428	1.2		1430	1.2		1502	1.1		1556	1.0		1623	1.0
	2147	0.1		2215	0.3		2156	0.3		2232	0.5		2324	0.5		2321	0.5
07	0243	1.1	22	0232	1.1	07	0234	1.1	22	0253	1.1	07	0313	0.9	22	0406	1.0
	0945	0.2		1006	0.2		1004	0.1		1039	0.1		1145	0.1		1153	0.2
	1453	1.3		1506	1.2		1506	1.2		1543	1.0		1753	0.9		1704	1.0
	2219	0.2		2254	0.4		2239	0.4		2304	0.5		1930	1.0			
08	0306	1.1	23	0304	1.0	08	0300	1.0	23	0326	1.0	08	0013	0.6	23	0000	0.5
	1019	0.2		1047	0.2		1053	0.1		1121	0.2		0354	0.9		0447	0.9
	1521	1.2		1547	1.1		1545	1.1		1624	1.0		1243	0.1		1241	0.3
	2253	0.3		2328	0.5		2326	0.5		2345	0.6		2054	0.9		1747	0.9
09	0328	1.0	24	0339	1.0	09	0319	0.9	24	0402	0.9	09	0108	0.6	24	0045	0.5
	1100	0.2		1132	0.3		1149	0.2		1208	0.3		0434	0.8		0526	0.9
	1556	1.1		1624	1.0		1624	1.0		1713	0.9		1343	0.2		1330	0.3
	2334	0.4					1947	0.9					2200	0.9		1839	0.8
10	0351	1.0	25	0004	0.6	10	0023	0.6	25	0026	0.6	10	0202	0.6	25	0134	0.5
	1151	0.3		0406	0.9		0347	0.8		0439	0.9		0528	0.8		0617	0.8
	1628	1.0		1223	0.3		1251	0.2		1302	0.3		0813	0.7		1423	0.4
				1709	0.8		1715	0.8		1823	0.8		1447	0.2		2134	0.8
				1958	0.8		1841	0.8		1949	0.8		2258	0.9			
				2154	0.8		2128	0.9		2115	0.8						
11	0023	0.6	26	0054	0.7	11	0136	0.7	26	0117	0.6	11	0302	0.6	26	0228	0.5
	0404	0.9		0434	0.9		0404	0.8		0519	0.8		0717	0.8		0738	0.8
	1253	0.3		1328	0.4		0743	0.6		1404	0.4		1034	0.8		1517	0.4
	1709	0.9		1817	0.7		0908	0.6		2215	0.8		1551	0.3		2243	0.8
	1932	0.8		1934	0.7		1358	0.2					2351	0.9			
	2158	0.8		2245	0.8		2234	1.0									
12	0136	0.7	27	0158	0.7	12	0302	0.7	27	0217	0.6	12	0408	0.6	27	0326	0.5
	0417	0.8		0443	0.8		0426	0.7		0747	0.7		1134	0.9		0926	0.8
	0802	0.6		1443	0.4		0738	0.6		1508	0.4		1654	0.3		1613	0.4
	0958	0.6		2315	0.9		1023	0.7		2300	0.9					2328	0.9
	1404	0.3					1508	0.2									
	1811	0.7					2321	1.0									
	1913	0.7															
	2300	1.0															
13	0319	0.7	28	0319	0.7	13	0649	0.6	28	0323	0.6	13	0028	0.8	28	0428	0.4
	0758	0.5		0643	0.7		1113	0.8		0939	0.8		0509	0.5		1056	0.9
	1102	0.7		0904	0.7		1619	0.2		1611	0.3		1221	0.9		1711	0.4
	1526	0.3		1558	0.4					2336	0.9		1754	0.3			
	2353	1.1		2351	0.9												
14	0754	0.5	29	0551	0.6	14	0004	1.0	29	0424	0.5	14	0058	0.8	29	0004	0.9
	1151	0.8		1056	0.8		0538	0.6		1043	0.9		0606	0.4		0528	0.3



1649	0.2	1704	0.3	1156	0.9	1708	0.3	1256	1.0	1208	0.9						
				1723	0.2			1847	0.3	1808	0.3						
								2332	0.8								
15	0032	1.1	30	0015	1.0	15	0049	1.0	30	0000	1.0	15	0656	0.3	30	0038	0.9
	0706	0.5		0547	0.5		0606	0.5		0517	0.4		1328	1.0		0623	0.2
	1226	0.9		1130	0.9		1228	1.0		1124	1.0		1936	0.3		1306	1.0
	1753	0.1		1758	0.2		1817	0.1		1800	0.2					1904	0.3
									31	0024	1.0						
										0606	0.3						
										1202	1.0						
										1847	0.2						

2023

UBATUBA - BASE NORTE DO IOUSP

2023

LATITUDE 23 30.0 S			LONGITUDE 45 7.3 W			FUSO + 3 HORAS													
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613							
JULHO						AGOSTO						SETEMBRO							
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT			
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M
01	0109	0.9	16	0036	1.0	01	0230	1.0	16	0156	1.1	01	0236	1.2	16	0236	1.3		
	0717	0.1		0811	0.1		0851	-0.1		0911	0.0		1002	-0.2		0958	0.0		
	1356	1.1		1432	1.1		1547	1.2		1443	1.2		1508	1.0		1500	1.2		
	2000	0.3		2049	0.4		2128	0.4		2126	0.3		2204	0.3		2154	0.2		
02	0136	0.9	17	0119	1.0	02	0243	1.0	17	0228	1.2	02	0258	1.2	17	0304	1.3		
	0808	0.0		0854	0.0		0939	-0.2		0951	0.0		1051	0.0		1032	0.1		
	1449	1.1		1439	1.1		1621	1.2		1508	1.2		1515	1.0		1524	1.1		
	2054	0.4		2123	0.4		2204	0.4		2156	0.3		2238	0.3		2226	0.2		
03	0204	0.9	18	0202	1.1	03	0258	1.1	18	0302	1.2	03	0324	1.2	18	0332	1.2		
	0900	0.0		0934	0.0		1024	-0.2		1026	0.0		1132	0.1		1100	0.2		
	1543	1.2		1506	1.1		1628	1.1		1534	1.1		1543	1.0		1551	1.1		
	2143	0.4		2154	0.4		2241	0.4		2224	0.3		2308	0.4		2300	0.3		
04	0224	0.9	19	0243	1.1	04	0319	1.1	19	0334	1.2	04	0400	1.2	19	0400	1.2		
	0951	-0.1		1009	0.0		1109	-0.1		1100	0.1		1211	0.3		1134	0.3		
	1636	1.1		1532	1.1		1600	1.0		1602	1.1		1608	0.9		1608	1.0		
	2226	0.4		2224	0.4		2311	0.4		2256	0.3		2345	0.4		2343	0.3		
05	0256	1.0	20	0319	1.1	05	0351	1.1	20	0402	1.2	05	0438	1.1	20	0430	1.1		
	1041	-0.1		1051	0.1		1158	0.0		1138	0.2		1258	0.5		1208	0.5		
	1732	1.1		1606	1.1		1617	0.9		1626	1.0		1645	0.9		1626	0.9		
	2308	0.5		2254	0.4		2347	0.5		2332	0.3		2106	0.4					
													2236	0.5					
06	0324	1.0	21	0358	1.1	06	0421	1.1	21	0428	1.1	06	0038	0.4	21	0036	0.3		
	1132	0.0		1130	0.1		1249	0.2		1208	0.3		0513	0.9		0506	0.9		
	1834	1.0		1636	1.0		1651	0.9		1653	1.0		0839	0.7		1302	0.6		
	2351	0.5		2328	0.4								1056	0.7		1647	0.8		
													1351	0.6					
													1711	0.9					
													2126	0.5					
													2326	0.5					
07	0402	1.0	22	0430	1.1	07	0021	0.5	22	0009	0.4	07	0153	0.5	22	0145	0.4		
	1221	0.0		1208	0.2		0500	1.1		0458	1.0		0606	0.8		0556	0.8		
	1702	0.9		1706	1.0		1338	0.4		1249	0.4		0845	0.7		0804	0.7		
	1954	0.9					1719	0.8		1709	0.9		1156	0.8		1054	0.8		
							2102	0.5					1500	0.7		1419	0.7		
							2245	0.6					1747	0.8		1658	0.8		
													2200	0.5		2019	0.6		
																2256	0.6		
08	0028	0.6	23	0004	0.4	08	0106	0.5	23	0100	0.4	08	0000	0.6	23	0300	0.4		
	0443	1.0		0500	1.0		0545	0.9		0530	0.9		0321	0.4		1149	1.0		
	1313	0.1		1253	0.3		0917	0.7		1338	0.5		1232	0.9		2017	0.5		
	1730	0.8		1738	0.9		1047	0.7		1738	0.8		2224	0.6		2349	0.7		
	1943	0.7					1432	0.5											
	2117	0.8					1800	0.8											
							2132	0.5											
							2349	0.6											
09	0108	0.6	24	0051	0.5	09	0215	0.5	24	0204	0.4	09	0015	0.7	24	0424	0.3		
	0524	1.0		0530	1.0		0641	0.8		0613	0.8		0458	0.4		1228	1.1		
	1409	0.3		1338	0.4		0913	0.7		0913	0.7		1258	1.0		2002	0.5		
	1808	0.7		1809	0.8		1200	0.8		1047	0.7		1851	0.6					
	2024	0.7					1541	0.6		1445	0.6								
	2243	0.7					1851	0.7		1800	0.8								
							2208	0.6		2058	0.6								
										2302	0.7								
10	0200	0.6	25	0145	0.5	10	0015	0.6	25	0317	0.4	10	0013	0.8	25	0026	0.9		
	0615	0.9		0609	0.9		0353	0.5		1200	0.9		0604	0.3		0541	0.2		
	1508	0.4		1424	0.4		1253	0.9		1606	0.6		1315	1.0		1308	1.2		
	1858	0.7		1851	0.8		1713	0.6		1819	0.7		1911	0.5		1924	0.5		
	2111	0.6					2008	0.7		2051	0.6								
	2345	0.7					2256	0.6											
11	0302	0.6	26	0245	0.5	11	0043	0.7	26	0002	0.8	11	0008	0.9	26	0102	1.0		
	0730	0.8		0706	0.8		0523	0.4		0439	0.3		0653	0.2		0639	0.0		
	0949	0.8		1521	0.5		1321	0.9		1251	1.0		1336	1.1		1349	1.2		
	1147	0.8		2054	0.7		1838	0.6		1956	0.6		1939	0.4		1936	0.4		



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UBATUBA - BASE NORTE DO IOUSP

2023

LATITUDE 23 30.0 S						LONGITUDE 45 7.3 W						FUSO + 3 HORAS					
IOUSP-BASE NORTE						NIVEL MEDIO .66 M						CARTA 1613					
OUTUBRO						NOVEMBRO						DEZEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0230	1.3	16	0238	1.3	01	0326	1.1	16	0332	1.1	01	0411	1.0	16	0434	1.0
	1021	0.1		1000	0.2		1117	0.5		1102	0.5		1136	0.6		1151	0.5
	1441	1.0		1453	1.1		1517	1.0		1509	0.9		1554	1.0		1549	0.9
	2208	0.3		2202	0.2		2321	0.2		2324	0.1		2358	0.2			
02	0302	1.2	17	0306	1.2	02	0408	1.0	17	0413	1.0	02	0500	0.9	17	0011	0.1
	1102	0.3		1034	0.3		1156	0.6		1156	0.6		1209	0.6		0753	0.9
	1506	1.0		1511	1.1		1556	1.0		1538	0.9		1638	0.9		1238	0.6
	2245	0.3		2241	0.2											1623	0.9
03	0339	1.1	18	0341	1.1	03	0011	0.3	18	0021	0.2	03	0051	0.3	18	0108	0.1
	1145	0.4		1108	0.4		0500	0.9		0506	0.9		0554	0.8		0906	0.9
	1541	1.0		1534	1.0		0741	0.8		0634	0.9		1258	0.6		1324	0.6
	2330	0.3		2328	0.2		0924	0.8		0838	0.9		1726	0.8		1709	0.8
							1241	0.7		1258	0.6						
							1626	0.9		1600	0.8						
04	0415	1.0	19	0413	1.0	04	0109	0.3	19	0124	0.2	04	0149	0.3	19	0208	0.2
	1223	0.6		1154	0.5		0600	0.8		0953	1.0		0941	0.8		1015	0.9
	1608	1.0		1554	0.9		0739	0.8		1404	0.7		1354	0.6		1419	0.6
							1017	0.8		1638	0.7		1851	0.8		1813	0.8
							1338	0.7		1923	0.7					2021	0.8
							1702	0.8		2136	0.7						
05	0023	0.4	20	0024	0.3	05	0219	0.4	20	0236	0.2	05	0249	0.4	20	0309	0.2
	0500	0.9		0458	0.9		1058	0.9		1051	1.0		1034	0.8		1113	0.9
	0800	0.7		0743	0.8		1453	0.7		1523	0.6		1454	0.6		1519	0.6
	1028	0.8		0900	0.8		1934	0.7		1739	0.7		2043	0.8		2300	0.8
	1308	0.7		1258	0.7					1906	0.7						
	1643	0.9		1606	0.8					2239	0.8						
	2247	0.5															
06	0134	0.4	21	0136	0.3	06	0334	0.4	21	0345	0.2	06	0351	0.4	21	0413	0.3
	0558	0.7		0556	0.8		1132	0.9		1138	1.0		1111	0.9		1204	0.8
	0800	0.7		0704	0.8		1632	0.6		1638	0.6		1556	0.5		1626	0.5
	1117	0.8		1024	0.9		2206	0.8		2326	0.9		2202	0.8			
	1413	0.8		1419	0.7												
	1658	0.8		1615	0.7												
	2200	0.5		1951	0.6												
	2313	0.6		2221	0.6												
07	0256	0.4	22	0253	0.3	07	0443	0.3	22	0451	0.2	07	0447	0.3	22	0004	0.9
	1154	0.9		1115	1.0		1158	0.9		1219	1.0		1141	0.9		0519	0.3
	2211	0.6		1947	0.6		1726	0.5		1728	0.5		1654	0.4		1251	0.8
	2338	0.7		2315	0.8		2304	0.9					2300	0.9		1736	0.4
08	0419	0.4	23	0406	0.2	08	0539	0.3	23	0008	1.0	08	0538	0.3	23	0058	1.0
	1215	0.9		1202	1.1		1221	1.0		0551	0.1		1204	0.9		0621	0.3
	1832	0.6		1904	0.5		1756	0.4		1300	1.0		1745	0.3		1311	0.8
	2330	0.8					2339	1.0		1809	0.4		2343	1.0		1834	0.3
09	0530	0.3	24	0000	0.9	09	0623	0.2	24	0045	1.0	09	0623	0.3	24	0147	1.0
	1241	1.0		0517	0.1		1236	1.0		0643	0.1		1223	1.0		0713	0.4
	1843	0.5		1247	1.1		1832	0.3		1330	0.9		1834	0.2		1149	0.8
	2343	0.9		1834	0.5					1854	0.3					1923	0.2
10	0619	0.2	25	0036	1.0	10	0009	1.1	25	0113	1.1	10	0021	1.0	25	0221	1.0
	1258	1.0		0613	0.0		0702	0.2		0730	0.2		0708	0.3		0802	0.4
	1858	0.4		1319	1.1		1249	1.1		1239	0.9		1243	1.0		1221	0.9
				1854	0.4		1908	0.2		1938	0.2		1917	0.1		2008	0.1
11	0011	1.0	26	0102	1.1	11	0041	1.1	26	0117	1.1	11	0100	1.1	26	0239	1.0
	0700	0.1		0704	0.0		0745	0.1		0815	0.2		0754	0.3		0851	0.4
	1311	1.1		1354	1.1		1308	1.1		1245	0.9		1309	1.0		1304	1.0
	1921	0.3		1924	0.3		1947	0.2		2019	0.2		2004	0.1		2053	0.1
12	0039	1.1	27	0121	1.1	12	0109	1.2	27	0132	1.1	12	0139	1.1	27	0234	1.1
	0741	0.1		0753	0.0		0819	0.1		0900	0.3		0841	0.3		0928	0.4
	1323	1.1		1404	1.0		1330	1.1		1313	1.0		1338	1.0		1349	1.0
	1949	0.2		1958	0.3		2026	0.1		2100	0.1		2053	0.0		2136	0.0
13	0108	1.2	28	0124	1.2	13	0145	1.2	28	0208	1.1	13	0223	1.1	28	0302	1.1
	0815	0.0		0838	0.0		0858	0.2		0943	0.4		0924	0.4		1004	0.4
	1339	1.1		1324	1.0		1356	1.1		1354	1.0		1408	1.0		1430	1.1
	2019	0.2		2036	0.2		2104	0.1		2145	0.1		2139	0.0		2213	0.0



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PORTO DE SANTOS - TORRE GRANDE

2023

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
JANEIRO						FEVEREIRO						MARCO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0413	0.4	16	0338	0.5	01	0130	1.2	16	0141	1.2	01	0054	1.1	16	0102	1.1
	0909	0.9		1108	0.9		0600	0.6		0817	0.5		0443	0.7		0749	0.5
	1726	0.6		1630	0.5		1258	1.0		1343	1.1		0711	0.8		1241	1.0
				2332	1.1		1830	0.4		1817	0.2		0951	0.8		1700	0.3
													1228	0.8			
													1658	0.5			
02	0023	1.1	17	0654	0.6	02	0200	1.3	17	0219	1.4	02	0121	1.2	17	0138	1.3
	0511	0.5		1245	1.0		0656	0.5		0854	0.4		0600	0.6		0806	0.4
	1056	0.9		1738	0.4		1326	1.1		1421	1.2		1247	1.0		1317	1.2
	1804	0.5					1917	0.2		1909	0.0		1823	0.4		1804	0.1
03	0109	1.2	18	0109	1.2	03	0228	1.3	18	0258	1.5	03	0149	1.3	18	0204	1.4
	0609	0.5		0758	0.5		0741	0.4		0921	0.4		0653	0.5		0836	0.3
	1232	1.0		1343	1.1		1358	1.2		1456	1.3		1309	1.1		1353	1.3
	1839	0.3		1830	0.2		1956	0.2		1958	-0.1		1911	0.3		1854	0.0
04	0147	1.2	19	0211	1.3	04	0254	1.4	19	0328	1.5	04	0208	1.4	19	0236	1.5
	0702	0.4		0845	0.4		0817	0.3		0941	0.4		0728	0.4		0854	0.3
	1319	1.1		1430	1.1		1423	1.3		1530	1.4		1339	1.3		1426	1.4
	1921	0.2		1919	0.1		2034	0.1		2043	-0.2		1943	0.2		1938	-0.2
05	0223	1.3	20	0300	1.4	05	0319	1.4	20	0353	1.5	05	0232	1.4	20	0254	1.5
	0751	0.4		0923	0.4		0854	0.3		0939	0.4		0802	0.3		0906	0.3
	1354	1.2		1511	1.2		1451	1.4		1553	1.4		1404	1.4		1453	1.5
	2004	0.2		2008	-0.1		2111	0.1		2124	-0.2		2019	0.1		2019	-0.2
06	0256	1.3	21	0347	1.5	06	0345	1.5	21	0404	1.4	06	0256	1.5	21	0306	1.4
	0832	0.4		0951	0.4		0928	0.2		0938	0.4		0834	0.2		0858	0.3
	1424	1.2		1549	1.2		1511	1.4		1609	1.4		1430	1.4		1515	1.5
	2045	0.1		2058	-0.1		2141	0.1		2209	-0.2		2043	0.1		2100	-0.2
07	0326	1.4	22	0421	1.5	07	0408	1.4	22	0409	1.3	07	0315	1.5	22	0309	1.4
	0909	0.3		1013	0.5		1000	0.2		0951	0.4		0904	0.2		0904	0.3
	1451	1.3		1626	1.2		1536	1.4		1611	1.3		1454	1.5		1524	1.5
	2128	0.1		2149	-0.2		2217	0.1		2256	0.0		2115	0.1		2143	-0.1
08	0358	1.4	23	0447	1.4	08	0432	1.4	23	0423	1.3	08	0336	1.5	23	0319	1.3
	0949	0.3		1009	0.5		1030	0.3		1004	0.4		0932	0.2		0919	0.3
	1515	1.3		1647	1.2		1600	1.4		1623	1.3		1517	1.5		1541	1.4
	2213	0.1		2238	-0.1		2243	0.2		2339	0.1		2136	0.1		2221	0.1
09	0428	1.4	24	0502	1.3	09	0458	1.3	24	0443	1.2	09	0356	1.4	24	0339	1.3
	1021	0.4		1017	0.6		1100	0.3		1013	0.4		1000	0.2		0938	0.3
	1541	1.3		1658	1.2		1626	1.3		1643	1.2		1541	1.5		1600	1.4
	2253	0.2		2326	-0.1		2321	0.2					2208	0.2		2302	0.3
10	0500	1.3	25	0513	1.2	10	0524	1.2	25	0023	0.3	10	0413	1.3	25	0358	1.3
	1056	0.4		1034	0.6		1132	0.4		0500	1.2		1030	0.2		0943	0.3
	1608	1.3		1700	1.1		1658	1.3		1013	0.4		1608	1.5		1623	1.3
	2334	0.2								1702	1.1		2236	0.3		2349	0.4
11	0534	1.3	26	0013	0.1	11	0000	0.3	26	0109	0.5	11	0439	1.2	26	0417	1.2
	1130	0.4		0532	1.2		0556	1.1		0523	1.1		1102	0.3		0928	0.4
	1641	1.2		1047	0.6		1208	0.4		1013	0.4		1639	1.4		1654	1.2
				1704	1.1		1734	1.2		1732	1.0		2309	0.4			
										2100	0.8						
										2304	0.9						
12	0011	0.3	27	0102	0.2	12	0049	0.5	27	0208	0.7	12	0500	1.1	27	0038	0.6
	0609	1.2		0554	1.1		0630	1.0		0553	1.0		1145	0.4		0443	1.1
	1204	0.5		1053	0.5		1300	0.5		1024	0.5		1711	1.2		0934	0.4
	1717	1.1		1715	1.0		1819	1.1		1806	0.9		2347	0.6		1726	1.0
										2054	0.8					2053	0.8
																2302	0.9
13	0051	0.3	28	0154	0.4	13	0154	0.6	28	0006	1.0	13	0513	1.0	28	0139	0.8
	0656	1.1		0617	1.0		0726	0.9		0317	0.7		1247	0.4		0504	1.0
	1251	0.6		1100	0.5		1419	0.5		0621	0.9		1753	1.1		0951	0.5
	1811	1.0		1734	0.9		1951	1.0		1032	0.6					1151	0.6
				2034	0.9					1226	0.7					1347	0.5
				2247	0.9					1513	0.6					1808	0.9
																2051	0.8
																2358	1.0
14	0136	0.4	29	0247	0.5	14	0321	0.7				14	0058	0.8	29	0258	0.8



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PORTO DE SANTOS - TORRE GRANDE

2023

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
ABRIL						MAIO						JUNHO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0117	1.3	16	0143	1.3	01	0102	1.3	16	0109	1.2	01	0126	1.2	16	0113	1.1
	0641	0.5		0802	0.3		0649	0.4		0743	0.4		0704	0.2		0723	0.3
	1238	1.2		1315	1.3		1226	1.3		1311	1.4		1306	1.4		1417	1.3
	1845	0.3		1826	0.0		1843	0.3		1841	0.1		1936	0.3		1953	0.4
02	0141	1.4	17	0158	1.4	02	0128	1.4	17	0115	1.2	02	0149	1.3	17	0147	1.2
	0711	0.3		0821	0.3		0713	0.3		0732	0.3		0734	0.1		0758	0.2
	1304	1.3		1345	1.4		1258	1.4		1338	1.4		1349	1.4		1449	1.3
	1928	0.2		1911	-0.1		1928	0.2		1924	0.1		2026	0.3		2034	0.4
03	0202	1.4	18	0208	1.4	03	0151	1.4	18	0130	1.2	03	0213	1.2	18	0213	1.2
	0741	0.2		0823	0.3		0738	0.2		0741	0.3		0808	0.0		0839	0.1
	1334	1.4		1413	1.5		1330	1.4		1409	1.4		1438	1.4		1524	1.3
	1951	0.1		1954	-0.1		1945	0.2		2008	0.2		2056	0.4		2113	0.4
04	0224	1.5	19	0211	1.3	04	0211	1.4	19	0154	1.2	04	0234	1.2	19	0243	1.2
	0808	0.2		0817	0.3		0802	0.1		0808	0.2		0853	0.0		0926	0.1
	1400	1.5		1432	1.5		1404	1.5		1438	1.4		1532	1.4		1558	1.3
	2023	0.1		2034	0.0		2023	0.2		2053	0.3		2132	0.4		2154	0.4
05	0243	1.5	20	0223	1.3	05	0226	1.4	20	0215	1.2	05	0258	1.1	20	0306	1.3
	0836	0.1		0830	0.2		0832	0.1		0841	0.2		0941	0.0		1021	0.2
	1428	1.5		1454	1.5		1438	1.5		1509	1.4		1626	1.4		1630	1.3
	2039	0.1		2111	0.1		2051	0.2		2132	0.3		2208	0.5		2230	0.4
06	0300	1.4	21	0243	1.3	06	0247	1.3	21	0241	1.3	06	0317	1.1	21	0334	1.3
	0902	0.1		0854	0.2		0906	0.1		0926	0.2		1038	0.1		1115	0.2
	1454	1.5		1515	1.4		1513	1.5		1545	1.3		1717	1.3		1706	1.3
	2113	0.1		2154	0.2		2126	0.3		2209	0.4		2234	0.7		2304	0.5
07	0315	1.4	22	0300	1.3	07	0306	1.2	22	0304	1.2	07	0338	1.0	22	0400	1.2
	0932	0.1		0921	0.2		0949	0.1		1026	0.2		1141	0.1		1204	0.2
	1523	1.5		1547	1.4		1553	1.4		1619	1.3		1802	1.2		1743	1.2
	2138	0.2		2234	0.4		2200	0.5		2253	0.5		2300	0.8		2343	0.5
08	0336	1.3	23	0321	1.3	08	0324	1.1	23	0330	1.2	08	0302	0.9	23	0430	1.2
	1004	0.1		0949	0.3		1039	0.2		1134	0.3		0609	0.8		1249	0.3
	1554	1.5		1613	1.3		1636	1.3		1702	1.2		0800	0.9		1821	1.2
	2209	0.3		2311	0.5		2230	0.6		2332	0.6		1245	0.1			
													1845	1.1			
													2321	0.8			
09	0358	1.2	24	0347	1.2	09	0339	1.0	24	0358	1.2	09	0217	0.9	24	0017	0.6
	1047	0.2		1117	0.4		1143	0.2		1232	0.3		0604	0.8		0506	1.1
	1626	1.4		1654	1.2		1724	1.2		1749	1.1		0908	0.9		1323	0.3
	2239	0.5					2300	0.8					1343	0.2		1908	1.1
													1928	1.0			
													2343	0.9			
10	0411	1.1	25	0000	0.6	10	0302	0.9	25	0013	0.7	10	0230	0.9	25	0106	0.6
	1139	0.3		0409	1.1		0713	0.7		0426	1.1		0611	0.7		0608	1.0
	1704	1.2		0921	0.5		0841	0.7		1319	0.4		1002	1.0		1400	0.4
	2302	0.7		1013	0.5		1253	0.3		1841	1.1		1438	0.2		2008	1.0
				1239	0.4		1832	1.0					2013	1.0			
				1734	1.0		2315	0.9					2349	0.9			
				2102	0.8												
				2209	0.8												
11	0404	0.9	26	0058	0.7	11	0208	1.0	26	0108	0.7	11	0239	0.9	26	0213	0.7
	1249	0.4		0439	1.0		0649	0.7		0502	1.0		0634	0.6		0902	0.9
	1754	1.1		1343	0.4		0954	0.8		1402	0.4		1049	1.1		1439	0.4
	2206	0.9		1826	0.9		1400	0.3		2006	1.0		1528	0.2		2130	1.0
				2056	0.9								2109	0.9			
				2311	0.9												
12	0251	0.9	27	0209	0.8	12	0121	1.0	27	0230	0.7	12	0045	0.9	27	0356	0.6
	0751	0.6		0504	0.9		0643	0.6		0919	0.9		0654	0.6		1017	1.0
	1026	0.7		1439	0.4		1043	1.0		1447	0.4		1132	1.2		1524	0.5
	1402	0.4		2353	1.0		1504	0.2		2239	1.0		1621	0.3		2324	1.0
	2043	0.9											2217	0.9			
13	0038	1.0	28	0408	0.8	13	0038	1.1	28	0445	0.7	13	0706	0.5	28	0513	0.5
	0711	0.6		0558	0.8		0658	0.5		1024	1.0		1213	1.2		1111	1.1
	1119	0.9		1053	0.9		1123	1.1		1526	0.4		1713	0.3		1626	0.5
	1521	0.4		1532	0.4		1604	0.2		2341	1.1		2343	1.0			



14	0056	1.2	29	0013	1.1	14	0054	1.1	29	0547	0.5	14	0708	0.5	29	0038	1.1
	0721	0.5		0551	0.6		0715	0.5		1106	1.1		1251	1.2		0556	0.4
	1202	1.1		1121	1.0		1202	1.2		1613	0.4		1808	0.3		1208	1.2
	1638	0.3		1630	0.4		1702	0.2								1930	0.5
15	0115	1.3	30	0039	1.2	15	0104	1.1	30	0023	1.2	15	0038	1.0	30	0126	1.1
	0747	0.4		0623	0.5		0738	0.4		0615	0.4		0702	0.4		0632	0.2
	1241	1.2		1154	1.1		1238	1.3		1147	1.2		1334	1.3		1311	1.3
	1738	0.1		1738	0.4		1754	0.1		1715	0.4		1902	0.4		2019	0.4
									31	0054	1.2						
										0638	0.3						
										1224	1.3						
										1830	0.4						

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PORTO DE SANTOS - TORRE GRANDE

2023

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
JULHO						AGOSTO						SETEMBRO					
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT	
DIA			DIA			DIA			DIA			DIA			DIA		
H M	M		H M	M		H M	M		H M	M		H M	M		H M	M	
01	0206	1.1	16	0158	1.2	01	0330	1.3	16	0239	1.4	01	0351	1.5	16	0302	1.6
	0711	0.1		0753	0.1		0830	-0.2		0853	0.0		0945	-0.2		0919	0.1
	1419	1.3		1508	1.3		1602	1.5		1532	1.5		1602	1.4		1538	1.4
	2056	0.4		2019	0.4		2204	0.4		2113	0.2		2147	0.4		2147	0.1
02	0241	1.2	17	0223	1.3	02	0400	1.3	17	0300	1.5	02	0400	1.4	17	0326	1.6
	0756	0.0		0832	0.1		0919	-0.2		0928	0.0		1028	-0.1		0934	0.2
	1519	1.4		1532	1.4		1634	1.5		1554	1.5		1611	1.3		1556	1.4
	2134	0.4		2100	0.3		2213	0.5		2147	0.2		2200	0.4		2215	0.2
03	0321	1.2	18	0251	1.3	03	0428	1.3	18	0323	1.5	03	0406	1.4	18	0353	1.5
	0841	-0.1		0915	0.1		1009	-0.2		0954	0.1		1111	0.1		0958	0.3
	1608	1.5		1556	1.4		1653	1.4		1615	1.4		1628	1.2		1615	1.3
	2156	0.5		2136	0.3		2215	0.5		2215	0.2		2211	0.4		2245	0.2
04	0343	1.1	19	0311	1.4	04	0432	1.3	19	0347	1.5	04	0419	1.3	19	0417	1.4
	0932	-0.1		0956	0.1		1100	-0.1		1028	0.2		1200	0.3		1023	0.4
	1651	1.4		1621	1.4		1706	1.3		1639	1.4		1649	1.2		1641	1.2
	2219	0.5		2208	0.3		2226	0.5		2245	0.2		2211	0.4		2319	0.3
05	0423	1.1	20	0336	1.4	05	0436	1.2	20	0409	1.4	05	0441	1.2	20	0451	1.3
	1026	-0.1		1041	0.1		1151	0.0		1047	0.2		1253	0.5		1045	0.5
	1724	1.4		1649	1.4		1719	1.2		1702	1.3		1706	1.1		1658	1.0
	2232	0.6		2241	0.3		2241	0.5		2311	0.3		2202	0.4			
06	0430	1.1	21	0400	1.3	06	0443	1.1	21	0438	1.4	06	0500	1.0	21	0008	0.4
	1124	0.0		1123	0.2		1239	0.2		1124	0.3		0834	0.8		0523	1.1
	1749	1.3		1715	1.3		1741	1.1		1728	1.2		1054	0.9		1036	0.7
	2253	0.6		2309	0.4		2247	0.5		2343	0.4		1351	0.7		1649	0.9
													1726	1.0			
													2206	0.5			
07	0445	1.0	22	0424	1.3	07	0449	1.1	22	0506	1.2	07	0528	0.9	22	0124	0.5
	1221	0.0		1158	0.3		1326	0.4		1208	0.5		0838	0.7		0611	1.0
	1809	1.2		1749	1.3		1800	1.1		1756	1.1		1158	1.0		0938	0.8
	2304	0.7		2343	0.4		2245	0.5					1456	0.8		1219	0.9
													1753	1.0		2019	0.7
													2211	0.6		2332	0.8
08	0413	1.0	23	0456	1.2	08	0456	1.0	23	0024	0.5	08	0051	0.7	23	0300	0.5
	0600	0.9		1236	0.3		0819	0.9		0543	1.1		0258	0.6		1247	1.1
	0817	1.0		1819	1.2		1036	0.9		1306	0.6		0606	0.7		1939	0.5
	1311	0.1					1417	0.5		1819	0.9		0758	0.7			
	1836	1.1					1821	1.0					1243	1.1			
	2319	0.7					2254	0.5					1608	0.8			
													1817	0.8			
													2154	0.7			
09	0339	0.9	24	0015	0.5	09	0511	0.9	24	0138	0.5	09	0041	0.8	24	0017	0.9
	0611	0.9		0532	1.1		0806	0.8		0636	1.0		0458	0.5		0430	0.4
	0924	1.0		1309	0.4		1151	1.0		1430	0.7		1311	1.2		1309	1.2
	1402	0.2		1858	1.1		1513	0.6		1717	0.8		1734	0.7		1956	0.4
	1902	1.0					1849	0.9		2208	0.7						
	2326	0.7					2302	0.6		2353	0.7						
10	0356	0.9	25	0102	0.6	10	0149	0.7	25	0311	0.6	10	0047	1.0	25	0058	1.1
	0630	0.8		0624	1.0		0258	0.7		1232	1.0		0619	0.4		0541	0.2
	1026	1.0		1358	0.5		0547	0.7		1949	0.6		1339	1.3		1343	1.4
	1456	0.3		1951	1.0		0713	0.7					1836	0.6		2015	0.4
	1934	1.0					1247	1.1									
	2334	0.7					1621	0.7									
							1915	0.8									
							2253	0.7									
11	0413	0.8	26	0217	0.6	11	0108	0.8	26	0049	0.9	11	0100	1.1	26	0134	1.3
	0649	0.7		0838	0.9		0611	0.5		0453	0.4		0656	0.2		0632	0.0
	1124	1.1		1456	0.6		1328	1.2		1315	1.2		1358	1.4		1408	1.5
	1549	0.5		2119	0.9		1736	0.7		2008	0.5		1913	0.4		2041	0.3
	2009	0.9															
	2358	0.7															
12	0132	0.7	27	0358	0.6	12	0111	0.9	27	0126	1.1	12	0124	1.3	27	0206	1.4
	0654	0.6		1111	1.0		0634	0.4		0600	0.2		0730	0.1		0715	-0.2
	1224	1.1		1609	0.6		1400	1.3		1358	1.3		1419	1.4		1434	1.5

1647	0.5		1756	0.7		1841	0.6		2041	0.4		1949	0.3		2054	0.3	
2119	0.8		1858	0.6													
13	0002	0.8	28	0051	0.9	13	0128	1.1	28	0200	1.2	13	0153	1.4	28	0238	1.5
	0634	0.5		0515	0.4		0711	0.2		0649	0.0		0800	0.1		0758	-0.2
	1317	1.2		1247	1.1		1428	1.3		1436	1.5		1439	1.5		1447	1.5
	1749	0.5		2000	0.5		1926	0.5		2104	0.3		2017	0.2		2058	0.3
14	0104	0.9	29	0139	1.0	14	0153	1.2	29	0238	1.3	14	0213	1.5	29	0300	1.5
	0641	0.4		0611	0.3		0745	0.1		0734	-0.1		0830	0.0		0836	-0.2
	1402	1.2		1353	1.3		1451	1.4		1506	1.5		1500	1.5		1456	1.4
	1849	0.5		2045	0.5		2006	0.4		2128	0.3		2051	0.1		2104	0.3
15	0130	1.0	30	0215	1.1	15	0213	1.3	30	0308	1.4	15	0239	1.5	30	0315	1.5
	0715	0.2		0700	0.1		0819	0.0		0815	-0.3		0853	0.0		0915	-0.1
	1439	1.3		1443	1.4		1511	1.4		1534	1.5		1519	1.5		1508	1.3
	1938	0.5		2113	0.4		2043	0.3		2139	0.3		2119	0.1		2115	0.3
			31	0253	1.2				31	0336	1.5						
				0745	-0.1					0900	-0.3						
				1524	1.5					1551	1.5						
				2145	0.4					2139	0.4						

2023

PORTO DE SANTOS - TORRE GRANDE

2023

LATITUDE 23 57.0 S						LONGITUDE 46 18.5 W						FUSO + 3 HORAS					
PORTO DE SANTOS						NIVEL MEDIO .77 M						CARTA 1701					
OUTUBRO						NOVEMBRO						DEZEMBRO					
HORA	ALT	HORA		ALT		HORA	ALT	HORA		ALT		HORA	ALT	HORA		ALT	
DIA		DIA				DIA		DIA				DIA		DIA			
H M	M	H M	M			H M	M	H M	M			H M	M	H M	M		
01	0324	1.5	16	0306	1.6	01	0400	1.3	16	0413	1.3	01	0449	1.2	16	0532	1.3
	0958	0.0		0909	0.2		1053	0.5		1002	0.6		1108	0.6		1043	0.7
	1523	1.3		1515	1.3		1532	1.2		1526	1.0		1553	1.2		1553	0.9
	2136	0.3		2149	0.1		2306	0.3		2311	0.2					1800	0.9
																1900	0.9
02	0345	1.4	17	0338	1.5	02	0436	1.2	17	0502	1.2	02	0009	0.3	17	0009	0.1
	1039	0.2		0932	0.3		1139	0.7		1034	0.7		0526	1.1		0617	1.2
	1545	1.2		1539	1.2		1556	1.1		1526	1.0		1156	0.6		1109	0.8
	2153	0.3		2224	0.2								1624	1.1		1456	0.9
																1743	0.8
																2024	0.9
03	0404	1.3	18	0408	1.4	03	0015	0.4	18	0017	0.2	03	0100	0.3	18	0109	0.1
	1121	0.5		1002	0.5		0511	1.0		0604	1.1		0617	1.1		0704	1.1
	1602	1.2		1558	1.1		0954	0.9		1104	0.8		1251	0.7		1145	0.8
	2134	0.4		2311	0.3		1236	0.8		1423	0.9		1706	1.0		1443	0.9
							1621	1.1		1843	0.7					1751	0.8
										2104	0.8					2124	1.0
04	0432	1.2	19	0445	1.3	04	0119	0.4	19	0124	0.3	04	0151	0.4	19	0206	0.2
	1209	0.6		1023	0.6		0606	0.9		0739	1.0		0728	1.0		0756	1.0
	1623	1.1		1602	1.0		0826	0.9		1154	0.9		1356	0.7		1219	0.8
	2121	0.4					1056	0.9		1358	1.0		1828	0.9		1456	0.9
							1347	0.8		1824	0.7					1808	0.7
							1658	1.0		2206	0.9					2219	1.1
05	0502	1.0	20	0011	0.3	05	0219	0.4	20	0234	0.3	05	0234	0.4	20	0304	0.2
	0817	0.8		0526	1.1		1128	1.0		1124	1.0		0936	1.0		0849	1.0
	1051	0.9		1023	0.8		1506	0.8		1839	0.6		1511	0.7		1838	0.7
	1309	0.8		1511	0.9		1754	0.8		2256	1.1		2145	1.0		2309	1.1
	1649	1.1		2002	0.7		2002	0.8									
	2132	0.5		2143	0.7		2224	0.8									
	2345	0.5															
06	0115	0.5	21	0128	0.4	06	0321	0.4	21	0339	0.2	06	0317	0.4	21	0400	0.3
	0545	0.9		0645	0.9		1154	1.1		1158	1.1		1104	1.0		0949	0.9
	0823	0.8		0900	0.9		1647	0.7		1858	0.5		1638	0.6		1856	0.6
	1145	1.0		1241	1.0		2300	1.0		2339	1.2		2243	1.1			
	1426	0.8		1908	0.6												
	1709	1.0		2253	0.8												
	2141	0.6															
	2345	0.7															
07	0249	0.5	22	0253	0.4	07	0426	0.4	22	0439	0.2	07	0411	0.4	22	0002	1.2
	1213	1.1		1226	1.1		1215	1.2		1219	1.1		1151	1.1		0458	0.3
	1600	0.8		1906	0.5		1745	0.5		1917	0.5		1734	0.5		1058	0.9
	1751	0.8		2339	1.0		2334	1.1					2326	1.1		1900	0.5
	2058	0.7															
	2347	0.8															
08	0409	0.5	23	0408	0.3	08	0539	0.4	23	0021	1.3	08	0524	0.4	23	0054	1.2
	1245	1.2		1251	1.2		1241	1.2		0532	0.1		1232	1.2		0553	0.4
	1732	0.7		1926	0.4		1821	0.4		1228	1.1		1811	0.4		1208	1.0
	2358	1.0								1936	0.4					1849	0.4
09	0534	0.4	24	0017	1.2	09	0006	1.2	24	0100	1.4	09	0009	1.2	24	0147	1.3
	1302	1.3		0515	0.1		0636	0.3		0619	0.1		0638	0.4		0643	0.4
	1821	0.5		1309	1.3		1306	1.3		1245	1.2		1306	1.2		1256	1.0
				1951	0.4		1853	0.3		1934	0.4		1841	0.3		1913	0.3
10	0019	1.1	25	0056	1.3	10	0043	1.3	25	0138	1.4	10	0053	1.3	25	0234	1.3
	0632	0.3		0606	0.0		0717	0.3		0704	0.1		0730	0.4		0726	0.4
	1321	1.3		1330	1.3		1330	1.3		1311	1.2		1334	1.2		1334	1.1
	1853	0.4		2006	0.3		1919	0.2		1934	0.3		1913	0.2		1951	0.2
11	0051	1.3	26	0132	1.4	11	0115	1.4	26	0215	1.4	11	0136	1.4	26	0309	1.3
	0709	0.2		0651	-0.1		0736	0.2		0749	0.2		0808	0.4		0809	0.4
	1343	1.4		1341	1.3		1351	1.3		1338	1.2		1400	1.2		1406	1.2
	1923	0.3		2017	0.3		1947	0.1		2002	0.2		1951	0.1		2032	0.1
12	0115	1.4	27	0202	1.5	12	0149	1.5	27	0238	1.4	12	0223	1.4	27	0334	1.3
	0739	0.1		0730	-0.1		0806	0.2		0826	0.3		0832	0.4		0854	0.4
	1404	1.4		1353	1.3		1411	1.3		1402	1.2		1421	1.2		1438	1.2







2023

CANANEIA - BASE SUL DO IOUSP

2023

LATITUDE 25 1.0 S				LONGITUDE 47 55.5 W				FUSO + 3 HORAS									
IOUSP-BASE SUL				NIVEL MEDIO .80 M				CARTA 1703									
ABRIL				MAIO				JUNHO									
HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT	HORA	ALT						
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M		
01	0108	1.3	16	0032	1.3	01	0058	1.4	16	0039	1.2	01	0128	1.4	16	0143	1.2
	0713	0.4		0819	0.3		0658	0.3		0813	0.5		0709	0.2		0645	0.3
	1243	1.2		1309	1.4		1234	1.3		1319	1.4		1302	1.4		1428	1.4
	1913	0.3		1917	0.0		1902	0.2		1923	0.2		2009	0.4		2000	0.5
02	0138	1.4	17	0115	1.4	02	0130	1.5	17	0123	1.3	02	0208	1.4	17	0221	1.3
	0728	0.3		0847	0.4		0713	0.2		0645	0.4		0741	0.1		0721	0.2
	1319	1.3		1353	1.5		1309	1.4		1402	1.4		1351	1.4		1513	1.4
	1938	0.2		1958	0.0		1930	0.2		1958	0.3		2051	0.4		2030	0.5
03	0206	1.5	18	0154	1.4	03	0202	1.5	18	0202	1.3	03	0251	1.4	18	0258	1.3
	0747	0.2		0824	0.5		0736	0.1		0658	0.3		0815	0.1		0800	0.1
	1356	1.4		1432	1.5		1349	1.4		1449	1.4		1445	1.4		1600	1.4
	2002	0.1		2032	0.1		1958	0.2		2021	0.4		2128	0.5		2100	0.5
04	0238	1.6	19	0232	1.5	04	0236	1.5	19	0243	1.3	04	0330	1.3	19	0328	1.3
	0806	0.2		0724	0.3		0800	0.1		0726	0.2		0856	0.1		0841	0.1
	1430	1.4		1511	1.5		1426	1.5		1532	1.4		1539	1.5		1641	1.4
	2024	0.1		2056	0.2		2021	0.3		2043	0.4		2047	0.6		2130	0.4
05	0306	1.6	20	0306	1.4	05	0308	1.5	20	0315	1.3	05	0413	1.2	20	0351	1.2
	0828	0.1		0749	0.2		0826	0.1		0804	0.1		0943	0.1		0919	0.2
	1502	1.5		1554	1.5		1506	1.5		1613	1.4		1630	1.5		1717	1.4
	2047	0.1		2111	0.2		2041	0.3		2106	0.4		2102	0.6		2200	0.4
													2347	0.8			
06	0339	1.6	21	0345	1.4	06	0347	1.4	21	0349	1.2	06	0109	0.7	21	0358	1.2
	0854	0.1		0817	0.1		0900	0.1		0843	0.1		0504	1.1		1002	0.2
	1538	1.5		1636	1.5		1551	1.5		1656	1.4		1041	0.2		1756	1.4
	2106	0.1		2128	0.3		2100	0.4		2136	0.4		1715	1.5		2232	0.4
													2124	0.7			
07	0408	1.5	22	0415	1.3	07	0423	1.3	22	0409	1.2	07	0021	0.9	22	0339	1.1
	0919	0.1		0856	0.1		0936	0.1		0917	0.2		0258	0.8		1049	0.3
	1608	1.5		1709	1.4		1636	1.5		1736	1.4		0604	1.0		1832	1.4
	2124	0.2		2151	0.4		2115	0.5		2202	0.5		1156	0.2		2302	0.5
													1802	1.5			
													2158	0.7			
08	0445	1.4	23	0447	1.2	08	0508	1.1	23	0328	1.1	08	0104	1.1	23	0338	1.1
	0951	0.1		0932	0.1		1017	0.2		1000	0.2		0419	0.7		1141	0.3
	1643	1.4		1753	1.3		1719	1.4		1811	1.3		0721	1.0		1908	1.3
	2147	0.3		2211	0.5		2141	0.5		2234	0.5		1315	0.2		2336	0.5
													1851	1.4			
													2232	0.7			
09	0521	1.2	24	0249	1.0	09	0100	0.9	24	0253	1.1	09	0151	1.2	24	0354	1.0
	1021	0.2		1006	0.2		0323	0.8		1047	0.3		0521	0.7		1245	0.4
	1721	1.4		1834	1.2		0608	1.0		1856	1.3		0839	1.0		1953	1.3
	2202	0.4		2243	0.6		1113	0.3		2304	0.6		1421	0.2			
							1806	1.4					1936	1.3			
							2204	0.6					2306	0.7			
10	0206	0.9	25	0239	1.1	10	0119	1.1	25	0300	1.0	10	0228	1.2	25	0009	0.6
	0306	0.9		1051	0.3		0451	0.7		1147	0.4		0609	0.6		0406	0.9
	0609	1.0		1917	1.1		0736	0.9		1943	1.2		0945	1.0		0551	0.9
	1100	0.3		2308	0.7		1306	0.4		2343	0.7		1519	0.3		0804	1.0
	1806	1.3					1900	1.3					2023	1.2		1351	0.4
	2221	0.5					2236	0.7					2354	0.7		2043	1.2
11	0154	1.0	26	0251	1.1	11	0153	1.2	26	0306	1.0	11	0308	1.1	26	0104	0.7
	0500	0.7		1139	0.5		0545	0.6		0636	0.8		0653	0.6		0402	0.8
	0726	0.9		2015	1.1		0904	0.9		0758	0.8		1038	1.1		0515	0.8
	1149	0.5		2347	0.8		1454	0.4		1336	0.5		1611	0.3		0913	1.0
	1902	1.2					1956	1.2		2038	1.2		2121	1.1		1451	0.5
	2251	0.7					2306	0.8								2147	1.2
12	0206	1.1	27	0254	1.0	12	0219	1.2	27	0030	0.8	12	0049	0.8	27	0528	0.6
	0558	0.6		0645	0.7		0623	0.5		0302	0.9		0351	1.0		1006	1.1
	0904	0.8		0854	0.8		1015	1.0		0613	0.8		0723	0.6		1553	0.5
	1519	0.5		1306	0.6		1602	0.3		0923	0.9		1123	1.2		2258	1.2
	2006	1.1		2141	1.1		2058	1.2		1530	0.5		1708	0.4			
	2311	0.8					2353	0.9		2147	1.1		2236	1.0			
13	0228	1.2	28	0039	1.0	13	0253	1.2	28	0606	0.7	13	0221	0.8	28	0556	0.5



0639	0.4	0223	1.0	0700	0.4	1019	1.0	0419	0.8	1054	1.2
1039	0.9	0643	0.7	1109	1.1	1630	0.4	0753	0.5	1815	0.5
1649	0.4	1017	0.9	1702	0.2	2300	1.2	1208	1.3		
2126	1.1	1704	0.5	2211	1.1			1800	0.4		
2351	1.0	2319	1.1					2354	1.1		
14 0251	1.2	29 0643	0.6	14 0056	1.0	29 0609	0.5	14 0800	0.5	29 0006	1.2
0713	0.3	1113	1.0	0309	1.1	1102	1.1	1256	1.3	0626	0.3
1143	1.1	1749	0.4	0734	0.4	1724	0.4	1851	0.5	1141	1.3
1747	0.2			1156	1.2					1958	0.5
2308	1.2			1754	0.2						
				2336	1.2						
15 0041	1.1	30 0019	1.3	15 0800	0.5	30 0002	1.3	15 0056	1.2	30 0102	1.3
0256	1.2	0647	0.4	1239	1.3	0623	0.4	0611	0.4	0700	0.2
0753	0.3	1158	1.1	1843	0.2	1143	1.2	1343	1.3	1230	1.3
1228	1.2	1828	0.3			1817	0.4	1930	0.5	2102	0.5
1836	0.1										
						31 0049	1.4				
						0645	0.3				
						1219	1.3				
						1913	0.4				

2023

CANANEIA - BASE SUL DO IOUSP

2023

LATITUDE 25 1.0 S			LONGITUDE 47 55.5 W			FUSO + 3 HORAS													
IOUSP-BASE SUL						NIVEL MEDIO .80 M						CARTA 1703							
JULHO						AGOSTO						SETEMBRO							
HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT		HORA	ALT			
DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M	DIA	H	M	M
01	0153	1.3	16	0209	1.2	01	0313	1.4	16	0302	1.4	01	0413	1.5	16	0338	1.5		
	0741	0.1		0732	0.2		0911	-0.1		0839	0.0		1008	0.0		0906	0.1		
	1326	1.4		1502	1.4		1519	1.5		1600	1.5		1626	1.5		1634	1.5		
	2200	0.5		2028	0.5		2319	0.5		2111	0.3		2054	0.4		2139	0.1		
02	0239	1.3	17	0247	1.3	02	0358	1.4	17	0330	1.4	02	0454	1.4	17	0400	1.5		
	0821	0.1		0808	0.1		0956	-0.1		0908	0.0		1030	0.1		0928	0.1		
	1430	1.4		1545	1.5		1606	1.6		1634	1.6		1704	1.5		1702	1.4		
	2253	0.5		2058	0.4		2123	0.7		2139	0.2		2117	0.3		2202	0.1		
							2356	0.6											
03	0321	1.3	18	0315	1.3	03	0439	1.4	18	0354	1.4	03	0536	1.3	18	0424	1.4		
	0908	0.0		0845	0.1		1039	-0.1		0936	0.1		1047	0.3		0954	0.2		
	1530	1.5		1623	1.5		1653	1.6		1704	1.5		1747	1.3		1738	1.3		
	2347	0.6		2126	0.4		2109	0.6		2202	0.2		2154	0.2		2230	0.2		
04	0408	1.3	19	0343	1.3	04	0521	1.3	19	0415	1.4	04	0213	1.1	19	0453	1.3		
	1000	0.0		0919	0.1		1119	0.0		1002	0.1		0353	1.0		1011	0.3		
	1621	1.5		1700	1.5		1732	1.5		1738	1.5		0621	1.2		1809	1.2		
	2106	0.7		2156	0.3		2139	0.4		2228	0.2		1100	0.4		2300	0.2		
	2241	0.7											1819	1.2					
													2226	0.2					
05	0049	0.7	20	0402	1.3	05	0256	1.0	20	0434	1.3	05	0241	1.1	20	0538	1.2		
	0458	1.2		0958	0.1		0609	1.2		1028	0.2		0509	1.0		1038	0.4		
	1054	0.0		1734	1.5		1151	0.2		1806	1.4		0721	1.0		1547	0.9		
	1706	1.6		2221	0.3		1808	1.4		2256	0.2		1121	0.6		1858	1.0		
	2119	0.7					2208	0.3					1549	0.8		2328	0.4		
													1858	1.0					
													2302	0.2					
06	0006	0.9	21	0419	1.2	06	0206	1.1	21	0458	1.3	06	0306	1.1	21	0643	1.1		
	0208	0.8		1032	0.2		0439	1.0		1056	0.3		0604	0.8		1100	0.6		
	0551	1.2		1806	1.5		0706	1.1		1843	1.3		0843	1.0		1434	0.9		
	1151	0.1		2251	0.3		1217	0.4		2321	0.3		1156	0.7		1723	0.8		
	1753	1.5					1849	1.3					1506	0.9		2002	0.9		
	2154	0.6					2249	0.3					1743	0.9					
													1941	0.9					
													2345	0.4					
07	0108	1.0	22	0430	1.2	07	0247	1.2	22	0543	1.2	07	0338	1.0	22	0004	0.5		
	0349	0.8		1106	0.3		0549	0.9		1119	0.4		0643	0.7		0800	1.1		
	0653	1.1		1841	1.4		0813	1.0		1919	1.1		1002	1.0		1128	0.7		
	1245	0.1		2315	0.4		1243	0.5		2354	0.4		1236	0.9		1445	1.0		
	1832	1.4					1923	1.1					1519	1.0		1823	0.6		
	2223	0.5					2323	0.3					1856	0.8		2147	0.8		
													2047	0.8					
08	0200	1.1	23	0445	1.1	08	0317	1.1	23	0704	1.1	08	0028	0.5	23	0502	0.5		
	0502	0.8		1147	0.3		0634	0.8		1153	0.5		0356	0.8		0921	1.1		
	0758	1.0		1913	1.3		0924	1.0		2013	1.0		0700	0.6		1204	0.9		
	1334	0.3		2351	0.4		1313	0.7					1123	1.0		1458	1.1		
	1909	1.3					2004	1.0					1445	1.0		1909	0.5		
	2300	0.5											1930	0.7		2341	1.0		
													2239	0.8					
09	0245	1.2	24	0630	1.1	09	0002	0.4	24	0026	0.5	09	0711	0.5	24	0556	0.3		
	0600	0.8		1223	0.4		0356	1.0		0828	1.1		1223	1.2		1049	1.2		
	0902	1.0		1956	1.2		0704	0.7		1219	0.7		1941	0.7		1300	1.1		
	1423	0.4					1038	1.0		1519	0.9					1506	1.2		
	1954	1.2					1408	0.8		1815	0.7					1953	0.4		
	2343	0.5					1600	0.8		2143	0.9								
							1808	0.8											
							2100	0.9											
10	0321	1.1	25	0023	0.5	10	0058	0.5	25	0528	0.6	10	0019	1.0	25	0043	1.1		
	0645	0.7		0802	1.0		0419	0.9		0949	1.1		0715	0.3		0639	0.0		
	1002	1.1		1306	0.5		0732	0.6		1302	0.8		1308	1.3		1206	1.3		
	1513	0.5		2053	1.1		1139	1.1		1526	0.9		1938	0.6		2026	0.3		
	2041	1.0					1924	0.8		1919	0.6								
							2247	0.9		2334	1.0								
11	0026	0.5	26	0111	0.6	11	0253	0.7	26	0613	0.3	11	0108	1.2	26	0123	1.3		

0402	1.0	0911	1.1	0415	0.7	1100	1.2	0723	0.2	0719	-0.1						
0715	0.6	1353	0.6	0747	0.5	1400	1.0	1345	1.4	1304	1.4						
1100	1.1	2204	1.0	1234	1.2	1538	1.0	1943	0.5	2102	0.3						
1611	0.6			1953	0.7	2008	0.4										
2143	1.0																
12	0132	0.6	27	0541	0.6	12	0026	1.0	27	0056	1.1	12	0145	1.3	27	0200	1.4
	0443	0.9		1011	1.1		0739	0.4		0658	0.1		0738	0.1		0758	-0.2
	0749	0.6		1445	0.7		1321	1.3		1209	1.3		1419	1.5		1353	1.5
	1153	1.2		1600	0.7		1954	0.6		2054	0.3		2000	0.3		2136	0.4
	1739	0.7		1909	0.6												
	2309	1.0		2339	1.1												
13	0349	0.6	28	0621	0.4	13	0121	1.1	28	0143	1.3	13	0213	1.4	28	0236	1.5
	0500	0.7		1111	1.2		0730	0.3		0739	-0.1		0800	0.0		0836	-0.2
	0758	0.5		2015	0.5		1404	1.4		1315	1.4		1456	1.5		1436	1.5
	1241	1.2					2002	0.5		2134	0.3		2023	0.2		2141	0.5
	1904	0.7															
14	0036	1.0	29	0054	1.1	14	0200	1.3	29	0221	1.4	14	0243	1.5	29	0309	1.6
	0726	0.4		0702	0.2		0745	0.1		0817	-0.2		0821	0.0		0908	-0.1
	1328	1.3		1211	1.3		1447	1.4		1411	1.5		1528	1.6		1517	1.5
	1936	0.6		2106	0.4		2021	0.4		2208	0.4		2049	0.2		2006	0.4
15	0130	1.2	30	0149	1.2	15	0236	1.3	30	0300	1.5	15	0309	1.5	30	0351	1.6
	0700	0.3		0747	0.1		0811	0.1		0858	-0.2		0845	0.0		0930	0.1
	1415	1.3		1319	1.4		1523	1.5		1500	1.6		1600	1.6		1558	1.4
	2002	0.6		2156	0.4		2049	0.3		2241	0.5		2111	0.1		2024	0.3
			31	0232	1.3				31	0338	1.5						
				0828	-0.1					0936	-0.2						
				1423	1.5					1547	1.6						
				2239	0.4					2045	0.6						



0715	0.1	0734	-0.1	0728	0.2	0808	0.3	0745	0.4	0811	0.5
1347	1.5	1321	1.4	1415	1.5	1424	1.3	1432	1.4	1453	1.2
1930	0.3	2054	0.5	1949	0.1	1913	0.3	2008	0.1	2002	0.2
12 0145	1.4	27 0206	1.5	12 0209	1.5	27 0306	1.5	12 0223	1.5	27 0338	1.4
0736	0.1	0808	0.0	0749	0.2	0823	0.4	0804	0.5	0839	0.5
1419	1.5	1406	1.4	1454	1.4	1506	1.3	1515	1.3	1530	1.2
1954	0.2	1928	0.5	2017	0.1	1956	0.2	2051	0.1	2045	0.2
13 0211	1.5	28 0247	1.6	13 0247	1.5	28 0351	1.4	13 0309	1.5	28 0415	1.5
0756	0.1	0836	0.1	0808	0.3	0845	0.4	0817	0.5	0906	0.4
1453	1.5	1451	1.4	1534	1.4	1549	1.2	1602	1.3	1602	1.2
2015	0.1	1936	0.3	2054	0.1	2034	0.2	2136	0.1	2123	0.2
14 0243	1.5	29 0324	1.5	14 0323	1.5	29 0430	1.4	14 0358	1.5	29 0456	1.4
0815	0.1	0853	0.3	0828	0.4	0908	0.5	0841	0.6	0941	0.4
1524	1.5	1532	1.3	1611	1.3	1623	1.2	1654	1.2	1634	1.2
2045	0.1	2004	0.2	2128	0.1	2113	0.2	2226	0.1	2202	0.2
15 0311	1.5	30 0404	1.5	15 0402	1.5	30 0509	1.4	15 0449	1.5	30 0534	1.4
0838	0.1	0904	0.4	0854	0.4	0943	0.5	0906	0.6	1011	0.4
1558	1.5	1608	1.3	1658	1.2	1654	1.1	1206	0.8	1653	1.2
2109	0.1	2043	0.1	2209	0.2	2158	0.2	1400	0.8	2239	0.2
								1747	1.1		
								2323	0.1		
		31 0447	1.4							31 0609	1.4
		0923	0.4							1049	0.4
		1651	1.2							1711	1.1
		2117	0.1							2313	0.3

FASES DA LUA PARA O ANO DE 2022

LUA NOVA				Q. CRESCENTE				LUA CHEIA				Q. MINGUANTE			
MES	D	H	M	MES	D	H	M	MES	D	H	M	MES	D	H	M
JAN	2	18	28	JAN	9	17	58	JAN	17	23	38	JAN	25	13	29
FEV	1	5	21	FEV	8	13	30	FEV	16	16	38	FEV	23	22	19
MAR	2	17	9	MAR	10	10	29	MAR	18	6	54	MAR	25	5	29
ABR	1	6	11	ABR	9	6	41	ABR	16	18	29	ABR	23	11	51
ABR	30	20	31	MAI	9	0	26	MAI	16	3	51	MAI	22	18	35
MAI	30	11	39	JUN	7	14	58	JUN	14	11	39	JUN	21	2	59
JUN	29	2	55	JUL	7	2	22	JUL	13	18	40	JUL	20	14	9
JUL	28	17	50	AGO	5	11	11	AGO	12	1	54	AGO	19	4	38
AGO	27	8	17	SET	3	18	13	SET	10	10	29	SET	17	22	10
SET	25	22	10	OUT	3	0	24	OUT	9	21	29	OUT	17	17	43
OUT	25	11	18	NOV	1	6	53	NOV	8	11	33	NOV	16	13	55
NOV	23	23	26	NOV	30	14	53	DEZ	8	4	30	DEZ	16	9	13
DEZ	23	10	29	DEZ	30	1	27								

TEMPO SEGUNDO O TMG

FASES DA LUA PARA O ANO DE 2023

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	21	20	42	JAN	28	15	9	JAN	6	23	14	JAN	15	2	11
FEV	20	6	38	FEV	27	7	43	FEV	5	18	17	FEV	13	15	49
MAR	21	16	52	MAR	29	2	7	MAR	7	12	16	MAR	15	1	54
ABR	20	3	54	ABR	27	21	1	ABR	6	4	5	ABR	13	9	2
MAI	19	15	53	MAI	27	15	16	MAI	5	17	7	MAI	12	14	26
JUN	18	4	50	JUN	26	7	58	JUN	4	3	25	JUN	10	19	34
JUL	17	18	46	JUL	25	22	24	JUL	3	11	39	JUL	10	1	52
AGO	16	9	45	AGO	24	10	16	AGO	1	18	51	AGO	8	10	33
SET	15	1	42	AGO	31	2	9	SET	29	10	34	SET	6	22	28
OUT	14	18	2	SET	22	19	46	SET	29	10	34	OUT	6	13	58
NOV	13	9	43	OUT	22	3	39	OUT	28	20	54	NOV	5	8	50
DEZ	12	23	49	NOV	20	10	59	NOV	27	9	35	DEZ	5	6	2
				DEZ	19	18	49	DEZ	27	0	42				

TEMPO SEGUNDO O TMG