Tábuas das marés de Ubatuba, Santos e Cananéia para os anos de 2020 e 2021

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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 2020 and 2021. 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 2020 e 2021. 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 2020 e 2021 (Harari & Mesquita, 2018). 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 n° 1613 da Diretoria de Hidrografia e Navegação da Marinha do Brasil. Na previsão de maré em Ubatuba, foram consideradas 33 componentes de maré, as quais caracterizam uma maré do tipo "desigualdades diurnas", sendo que o estabelecimento do porto é em 02 h 46 min.

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

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

Estimativas da maré em instantes intermediários entre as ocorrências das preamares e baixamares previstas na Tábua podem ser obtidas, em primeira aproximação, através de uma interpolação linear, considerando dois extremos consecutivos fornecidos e seus respectivos instantes de ocorrência. Uma aproximação mais precisa desta interpolação considera o caráter senoidal da maré, de modo que, sendo ∆H a variação de nível entre dois extremos consecutivos da maré e sendo ∆T o intervalo de tempo para a ocorrência desta variação, se tem que: em 5% de ∆T a maré varia 0,6% de ∆H; 12,5% de ∆T corresponde a 3,4% de ∆H; e assim sucessivamente, conforme apresentado na Tabela 1. Deve-se notar que valores ∆H e ∆T são facilmente obtidos das Tábuas de Marés, e que as porcentagens de ∆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 2020 e 2021, seguidas da Tabela das Fases da Lua desses anos. As tábuas de marés e as informações sobre as fases da lua podem também ser encontradas na internet, através dos endereços www.mares.io.usp.br e www.labsip.io.usp.br.

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

% deΔT	%deΔH	%deΔT	%deΔH
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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2020                    UBATUBA - BASE NORTE DO IOUSP                    2020

          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            DIA            DIA            DIA            DIA            DIA
      H M   M        H M   M        H M   M        H M   M        H M   M        H M   M

01 0102  0.3  16 0123  0.2  01 0200  0.4  16 0256  0.5  01 0117  0.4  16 0223  0.7
   0549  0.9     0545  0.8     0623  0.8     0602  0.7     0526  0.9     0511  0.8
   1258  0.6     0709  0.8     1404  0.5     0900  0.6     1326  0.4     0900  0.5
   1756  0.9     0919  0.8     1828  0.8     1138  0.7     1747  0.8     1119  0.6
                 1326  0.5                   1458  0.5                   1438  0.4
                 1738  0.9                   1858  0.8                   1826  0.7
                                             2111  0.7                   2049  0.7
02 0156  0.3  17 0219  0.3  02 0258  0.5  17 0011  0.8  02 0209  0.5  17 0009  0.9
   0639  0.8     0617  0.7     0713  0.8     0423  0.6     0558  0.8     0921  0.6
   1354  0.5     0800  0.7     1509  0.5     0654  0.7     1438  0.4     1200  0.7
   1906  0.8     1039  0.8     2332  0.8     0934  0.6     1839  0.7     1600  0.4
                 1421  0.5                   1217  0.7     2021  0.7
                 1826  0.9                   1621  0.4     2324  0.8
03 0253  0.4  18 0324  0.4  03 0358  0.5  18 0102  0.9  03 0315  0.6  18 0053  0.9
   0747  0.8     0706  0.7     1058  0.8     0611  0.6     0636  0.7     0651  0.6
   1456  0.5     0845  0.6     1621  0.4     1254  0.8     0906  0.7     1230  0.7
   2106  0.8     1139  0.8                   1741  0.3     1100  0.7     1717  0.3
                 1528  0.5                                 1553  0.4
                 1945  0.8
                 2138  0.8
                 2358  0.8
04 0349  0.4  19 0441  0.4  04 0023  0.9  19 0141  1.0  04 0011  0.9  19 0111  1.0
   1017  0.8     1226  0.8     0502  0.5     0706  0.5     0436  0.6     0700  0.5
   1600  0.5     1645  0.4     1154  0.8     1308  0.8     1156  0.8     1241  0.8
   2317  0.8                   1732  0.3     1841  0.2     1706  0.3     1817  0.2
05 0445  0.4  20 0058  0.9  05 0104  1.0  20 0202  1.0  05 0056  1.1  20 0132  1.0
   1115  0.9     0558  0.5     0608  0.4     0749  0.5     0558  0.5     0728  0.4
   1704  0.4     1302  0.8     1234  0.9     1249  0.9     1236  0.9     1232  0.9
                 1756  0.3     1832  0.2     1926  0.1     1811  0.2     1902  0.1
06 0011  0.9  21 0145  1.0  06 0147  1.1  21 0213  1.0  06 0134  1.2  21 0136  1.0
   0541  0.4     0702  0.5     0708  0.4     0819  0.4     0700  0.4     0756  0.4
   1143  0.9     1330  0.8     1306  0.9     1304  1.0     1308  1.0     1249  1.0
   1802  0.3     1854  0.2     1924  0.1     2008  0.0     1906  0.0     1947  0.1
07 0053  1.0  22 0215  1.0  07 0224  1.2  22 0158  1.1  07 0208  1.2  22 0124  1.1
   0634  0.3     0753  0.4     0800  0.3     0851  0.3     0745  0.3     0821  0.3
   1217  1.0     1245  0.9     1338  1.0     1332  1.1     1339  1.0     1315  1.1
   1854  0.2     1945  0.1     2013  0.0     2051  0.0     1958 -0.1     2024  0.0
08 0132  1.0  23 0239  1.0  08 0300  1.2  23 0208  1.1  08 0249  1.3  23 0136  1.1
   0723  0.3     0836  0.4     0847  0.3     0917  0.3     0823  0.2     0845  0.2
   1249  1.0     1304  1.0     1408  1.1     1408  1.2     1402  1.1     1351  1.2
   1943  0.1     2026  0.0     2100 -0.1     2128  0.0     2045 -0.1     2100  0.0
09 0213  1.1  24 0224  1.1  09 0339  1.2  24 0232  1.2  09 0319  1.2  24 0204  1.2
   0811  0.3     0909  0.4     0926  0.3     0943  0.3     0900  0.2     0911  0.2
   1323  1.0     1339  1.0     1432  1.1     1445  1.2     1419  1.2     1419  1.2
   2030  0.0     2108  0.0     2151 -0.1     2204  0.0     2128 -0.1     2139  0.0
10 0251  1.1  25 0224  1.1  10 0411  1.2  25 0302  1.2  10 0338  1.1  25 0234  1.2
   0900  0.3     0945  0.4     1006  0.3     1008  0.3     0939  0.2     0939  0.2
   1358  1.0     1415  1.1     1458  1.1     1515  1.2     1436  1.2     1454  1.2
   2115  0.0     2151  0.0     2236 -0.1     2245  0.1     2211 -0.1     2213  0.1
11 0334  1.2  26 0254  1.1  11 0421  1.1  26 0336  1.1  11 0319  1.0  26 0304  1.2
   0947  0.3     1013  0.4     1047  0.3     1038  0.3     1013  0.2     1008  0.2
   1432  1.1     1458  1.1     1524  1.2     1551  1.2     1502  1.2     1521  1.2
   2202  0.0     2230  0.0     2319  0.0     2317  0.2     2258  0.0     2251  0.2
12 0419  1.1  27 0326  1.1  12 0409  1.0  27 0404  1.1  12 0324  1.0  27 0334  1.1
   1030  0.4     1039  0.4     1123  0.4     1106  0.4     1054  0.3     1041  0.3
   1506  1.1     1538  1.1     1558  1.2     1617  1.1     1532  1.2     1553  1.1
   2253  0.0     2308  0.1                   2356  0.2     2345  0.2     2323  0.3
13 0439  1.1  28 0402  1.1  13 0006  0.1  28 0436  1.0  13 0353  0.9  28 0400  1.1
   1109  0.4     1104  0.4     0426  0.9     1143  0.4     1136  0.3     1117  0.3
   1541  1.0     1611  1.1     1202  0.4     1645  1.0     1606  1.2     1615  1.1
   2341  0.0     2351  0.2     1630  1.1                                 2358  0.4
14 0519  1.0  29 0438  1.0  14 0058  0.2  29 0036  0.3  14 0030  0.4  29 0421  1.0
   1154  0.4     1138  0.4     0458  0.8     0502  0.9     0413  0.9     1158  0.3
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	1613	1.0		1649	1.0		0854	0.7	1230	0.4		1221	0.4		1647	1.0
							1251	0.5	1709	0.9		1649	1.0			
							1708	1.0				2143	0.7			
15	0032	0.1	30	0030	0.2	15	0153	0.4			15	0119	0.5	30	0045	0.5
	0513	0.9		0509	1.0		0524	0.8				0449	0.8		0447	0.9
	0754	0.9		1215	0.5		0823	0.6				0830	0.5		1256	0.4
	1239	0.5		1717	1.0		1032	0.6				1019	0.5		1719	0.9
	1656	1.0					1349	0.5				1319	0.4		2021	0.7
							1756	0.9				1728	0.9		2147	0.8
							2106	0.7				2030	0.7			
							2304	0.8				2313	0.8			
			31	0111	0.3									31	0143	0.6
				0549	0.9										0506	0.8
				1304	0.5										1404	0.4
				1749	0.9										1811	0.7
															1951	0.7
															2300	0.9

2020   UBATUBA - BASE NORTE DO IOUSP   2020

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

IOUSP-BASE NORTE   NIVEL MEDIO   .66 M   CARTA 1613

	ABRIL						MAIO						JUNHO				
DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M
01	0254	0.6	16	0013	0.9	01	0354	0.6	16	0543	0.6	01	0021	1.1	16	0532	0.4
	0539	0.7		0617	0.6		0613	0.6		1108	0.8		0515	0.4		1147	0.9
	0834	0.6		1154	0.7		1106	0.8		1704	0.3		1209	1.0		1800	0.3
	1045	0.7		1647	0.3		1619	0.3					1758	0.2		2338	0.9
	1524	0.4															
	2351	1.0															
02	0415	0.6	17	0039	0.9	02	0002	1.1	17	0002	0.9	02	0104	1.0	17	0621	0.3
	0619	0.6		0636	0.5		0509	0.5		0608	0.5		0608	0.3		1224	1.0
	0758	0.6		1202	0.8		1154	0.9		1132	0.9		1253	1.0		1849	0.3
	1139	0.8		1747	0.2		1724	0.2		1758	0.3		1853	0.1			
	1647	0.3								2358	1.0						
03	0030	1.1	18	0051	1.0	03	0047	1.2	18	0634	0.4	03	0147	1.0	18	0009	1.0
	0547	0.5		0658	0.4		0600	0.4		1204	1.0		0658	0.3		0704	0.2
	1217	0.9		1208	0.9		1232	1.0		1843	0.2		1326	1.1		1258	1.0
	1754	0.2		1836	0.2		1821	0.1					1945	0.2		1932	0.3
04	0108	1.2	19	0045	1.0	04	0124	1.2	19	0011	1.0	04	0208	0.9	19	0043	1.0
	0639	0.4		0719	0.3		0643	0.3		0702	0.3		0745	0.2		0749	0.1
	1254	1.0		1226	1.0		1300	1.1		1234	1.1		1326	1.1		1332	1.1
	1849	0.0		1915	0.1		1911	0.0		1923	0.2		2032	0.2		2013	0.3
05	0149	1.2	20	0045	1.1	05	0200	1.1	20	0036	1.1	05	0115	0.9	20	0113	1.1
	0717	0.3		0745	0.3		0723	0.2		0738	0.2		0832	0.1		0830	0.1
	1323	1.1		1256	1.1		1321	1.1		1304	1.1		1338	1.1		1409	1.1
	1938	-0.1		1956	0.1		2000	0.0		2002	0.1		2115	0.3		2058	0.3
06	0223	1.2	21	0108	1.1	06	0230	1.0	21	0104	1.1	06	0130	0.9	21	0151	1.1
	0754	0.2		0809	0.2		0804	0.2		0811	0.2		0917	0.1		0911	0.0
	1341	1.2		1324	1.2		1326	1.2		1336	1.2		1411	1.1		1443	1.1
	2021	-0.1		2034	0.1		2049	0.0		2041	0.2		2200	0.4		2141	0.3
07	0253	1.2	22	0134	1.2	07	0147	1.0	22	0136	1.1	07	0204	1.0	22	0223	1.1
	0832	0.2		0841	0.2		0847	0.1		0851	0.1		1002	0.1		0956	0.0
	1351	1.2		1358	1.2		1347	1.2		1408	1.2		1453	1.1		1524	1.1
	2106	-0.1		2108	0.1		2134	0.1		2117	0.2		2247	0.5		2223	0.4
08	0243	1.1	23	0204	1.2	08	0158	1.0	23	0206	1.1	08	0245	1.0	23	0300	1.0
	0908	0.2		0911	0.2		0930	0.1		0928	0.1		1051	0.1		1045	0.1
	1409	1.3		1426	1.2		1417	1.2		1443	1.2		1530	1.0		1609	1.1
	2153	0.0		2147	0.1		2215	0.3		2156	0.3		2323	0.6		2306	0.4
09	0228	1.0	24	0234	1.2	09	0219	1.0	24	0238	1.1	09	0321	1.0	24	0334	1.0
	0949	0.2		0947	0.2		1013	0.1		1006	0.1		1139	0.1		1132	0.1
	1438	1.3		1458	1.2		1458	1.1		1517	1.1		1613	1.0		1645	1.0
	2238	0.1		2219	0.2		2300	0.4		2238	0.4					2354	0.5
10	0253	1.0	25	0302	1.1	10	0254	1.0	25	0306	1.0	10	0000	0.6	25	0408	1.0
	1030	0.2		1021	0.2		1100	0.2		1051	0.1		0406	1.0		1221	0.1
	1508	1.2		1526	1.1		1538	1.1		1556	1.0		1226	0.2		1941	0.9
	2317	0.3		2256	0.3		2347	0.6		2319	0.5		1702	0.9			
11	0313	1.0	26	0326	1.1	11	0326	1.0	26	0336	1.0	11	0038	0.6	26	0043	0.5
	1113	0.2		1058	0.2		1153	0.2		1139	0.2		0456	0.9		0451	0.9
	1551	1.1		1600	1.1		1617	1.0		1636	1.0		1317	0.3		1315	0.2
				2336	0.4		1921	0.8					1754	0.9		2104	0.9
							2102	0.8									
12	0002	0.5	27	0354	1.0	12	0030	0.7	27	0006	0.5	12	0117	0.6	27	0134	0.5
	0349	0.9		1145	0.3		0402	0.9		0404	0.9		0558	0.8		0536	0.9
	1202	0.3		1634	1.0		1249	0.3		1236	0.2		1411	0.3		1413	0.2
	1626	1.0					1708	0.9		2034	0.9		1856	0.8		2211	0.9
	1951	0.7					1951	0.7									
	2147	0.8					2211	0.8									
13	0056	0.6	28	0021	0.5	13	0117	0.7	28	0104	0.6	13	0213	0.6	28	0228	0.5
	0413	0.9		0411	0.9		0445	0.8		0441	0.8		0738	0.8		0638	0.8
	0949	0.5		1243	0.3		1351	0.3		1338	0.3		1511	0.4		1517	0.3
	1302	0.3		1713	0.9		1808	0.9		2151	1.0		2021	0.8		2311	0.9
	1713	0.9		1913	0.8		2006	0.7									
	2000	0.7		2111	0.8		2300	0.8									
	2300	0.8															
14	0158	0.7	29	0119	0.6	14	0228	0.7	29	0204	0.6	14	0324	0.6	29	0330	0.5
	0447	0.8		0443	0.8		0539	0.8		0523	0.8		0928	0.8		1104	0.9

	0900	0.5		1353	0.3		1456	0.3		0856	0.7
	1053	0.6		2224	0.9		2328	0.8		1445	0.3
	1411	0.4								2247	1.0
	1815	0.7									
	2013	0.7									
	2351	0.9									

	1611	0.4		1624	0.3
	2311	0.8			

15	0919	0.6	30	0234	0.6	15	0454	0.7	30	0309	0.6	15	0436	0.5	30	0006	0.9
	1128	0.6		0509	0.7		0849	0.7		1026	0.8		1106	0.9		0438	0.5
	1532	0.4		0800	0.6		1602	0.3		1553	0.2		1709	0.3		1211	0.9
				1002	0.7		2353	0.9		2338	1.0		2319	0.9		1736	0.3
				1504	0.3												
				2315	1.0												

31	0415	0.5
	1123	0.9
	1658	0.2

2020   UBATUBA - BASE NORTE DO IOUSP   2020

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

IOUSP-BASE NORTE   NIVEL MEDIO .66 M   CARTA 1613

JULHO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0056	0.9	16	0543	0.3
	0541	0.4		1253	0.9
	1306	1.0		1813	0.4
	1839	0.3			
02	0136	0.9	17	0000	0.9
	0641	0.3		0638	0.2
	1358	1.0		1330	1.0
	1936	0.3		1906	0.4
03	0156	0.9	18	0036	1.0
	0734	0.2		0726	0.1
	1441	1.1		1402	1.1
	2023	0.4		1956	0.3
04	0109	0.9	19	0109	1.0
	0821	0.1		0811	0.0
	1453	1.1		1438	1.1
	2106	0.4		2043	0.3
05	0124	1.0	20	0147	1.0
	0906	0.0		0858	0.0
	1424	1.1		1513	1.2
	2151	0.4		2124	0.3
06	0202	1.0	21	0221	1.1
	0953	0.0		0945	0.0
	1453	1.1		1541	1.2
	2226	0.5		2206	0.3
07	0245	1.1	22	0258	1.1
	1036	0.0		1030	0.0
	1524	1.1		1621	1.1
	2258	0.5		2249	0.3
08	0324	1.1	23	0330	1.1
	1115	0.1		1115	0.0
	1604	1.0		1634	1.0
	2324	0.5		2328	0.4
09	0406	1.0	24	0404	1.1
	1200	0.2		1202	0.1
	1645	1.0		1700	1.0
	2354	0.5			
10	0453	1.0	25	0009	0.4
	1247	0.2		0439	1.0
	1721	0.9		1254	0.2
				1721	0.9
				1913	0.8
11	0032	0.5	26	0056	0.5
	0538	0.9		0513	1.0
	1336	0.3		1349	0.3
	1806	0.9		1758	0.8
				1954	0.7
				2156	0.8
12	0121	0.5	27	0151	0.5
	0628	0.8		0600	0.9
	1423	0.4		1451	0.4

AGOSTO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0143	0.9	16	0049	0.9
	0723	0.1		0706	0.1
	1441	1.1		1404	1.1
	2017	0.4		1943	0.4
02	0117	0.9	17	0121	1.0
	0808	0.0		0756	0.0
	1453	1.1		1441	1.2
	2056	0.4		2024	0.3
03	0126	1.0	18	0151	1.1
	0854	0.0		0843	-0.1
	1428	1.1		1511	1.2
	2132	0.4		2104	0.3
04	0202	1.1	19	0221	1.1
	0936	0.0		0926	-0.1
	1439	1.1		1538	1.2
	2200	0.4		2145	0.2
05	0241	1.1	20	0247	1.2
	1013	0.0		1009	-0.1
	1508	1.1		1547	1.1
	2226	0.4		2221	0.3
06	0313	1.2	21	0313	1.2
	1054	0.1		1056	-0.1
	1543	1.1		1556	1.0
	2251	0.4		2258	0.3
07	0356	1.1	22	0343	1.2
	1134	0.1		1143	0.1
	1615	1.1		1611	1.0
	2317	0.4		2339	0.3
08	0430	1.1	23	0411	1.1
	1209	0.2		1228	0.2
	1653	1.0		1638	0.9
	2354	0.4			
09	0504	1.0	24	0023	0.4
	1254	0.3		0451	1.1
	1723	0.9		1317	0.4
				1702	0.8
				2009	0.6
				2149	0.6
10	0041	0.5	25	0115	0.4
	0536	0.9		0526	1.0
	1341	0.4		0858	0.7
	1800	0.9		1015	0.7
				1415	0.5
				1736	0.7
				2039	0.6
				2302	0.6
11	0141	0.5	26	0223	0.5
	0609	0.8		0615	0.8
	1432	0.5		0856	0.7
	1838	0.8		1149	0.8
				1541	0.6
				1804	0.7
				2102	0.6
12	0249	0.5	27	0000	0.7
	0715	0.7		0347	0.4
	0856	0.7		0747	0.7

SETEMBRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0119	1.1	16	0143	1.1
	0834	0.0		0821	-0.1
	1354	1.1		1453	1.2
	2102	0.3		2039	0.2
02	0153	1.2	17	0206	1.2
	0911	0.0		0904	-0.1
	1413	1.1		1515	1.2
	2130	0.3		2115	0.2
03	0223	1.2	18	0224	1.2
	0951	0.0		0951	-0.1
	1443	1.2		1513	1.1
	2154	0.3		2153	0.2
04	0300	1.2	19	0249	1.3
	1026	0.1		1036	0.0
	1513	1.1		1513	1.0
	2219	0.3		2232	0.2
05	0334	1.2	20	0315	1.2
	1102	0.1		1115	0.1
	1549	1.1		1534	1.0
	2249	0.3		2311	0.3
06	0404	1.1	21	0351	1.2
	1139	0.2		1202	0.3
	1615	1.0		1600	0.9
	2324	0.4		2358	0.3
07	0432	1.1	22	0423	1.1
	1213	0.4		1254	0.5
	1645	1.0		1623	0.9
				2013	0.5
				2138	0.5
08	0006	0.4	23	0056	0.4
	0500	1.0		0506	0.9
	1256	0.5		0806	0.7
	1706	0.9		1039	0.8
				1356	0.6
				1654	0.8
				2036	0.5
				2254	0.6
09	0100	0.4	24	0204	0.4
	0526	0.9		0600	0.8
	1351	0.5		0817	0.7
	1732	0.8		1147	0.9
				1532	0.7
				1702	0.7
				2100	0.5
				2345	0.6
10	0206	0.4	25	0324	0.4
	0611	0.8		0721	0.7
	0823	0.7		0824	0.7
	1115	0.8		1226	0.9
	1453	0.6		2104	0.6
	1800	0.8			
11	0321	0.4	26	0013	0.7
	1200	0.9		0451	0.3
	1604	0.6		1300	1.0
	1856	0.7		1854	0.6
	2017	0.7			
	2336	0.7			
12	0441	0.3	27	0041	0.8
	1239	1.0		0556	0.2
	1732	0.5		1319	1.0

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   1900  0.8      1832  0.7      1132  0.8      0856  0.7                     1911  0.5
                  2019  0.7      1530  0.5      1241  0.9
                  2304  0.8      1941  0.7      1802  0.6
                                               2121  0.6
13 0221  0.5   28 0254  0.5   13 0358  0.4   28 0039  0.7   13 0013  0.8   28 0039  0.9
   0753  0.8      0658  0.8      1219  0.9      0508  0.3      0551  0.2      0647  0.1
   1519  0.4      0911  0.8      1639  0.5      1319  1.0      1311  1.1      1334  1.0
   2013  0.8      1124  0.8      2338  0.8      1900  0.6      1838  0.4      1941  0.4
                  1600  0.5
                  1921  0.6
                  2056  0.6
14 0330  0.5   29 0002  0.8   14 0508  0.3   29 0104  0.8   14 0049  0.9   29 0036  1.0
   1115  0.8      0404  0.5      1258  1.0      0615  0.2      0647  0.1      0728  0.1
   1617  0.4      1236  0.9      1749  0.5      1354  1.0      1349  1.2      1323  1.0
   2215  0.8      1723  0.5                     1936  0.5      1921  0.3      2004  0.3
15 0441  0.4   30 0053  0.8   15 0015  0.8   30 0117  0.9   15 0117  1.0   30 0102  1.1
   1215  0.9      0523  0.4      0611  0.2      0706  0.1      0738  0.0      0806  0.0
   1715  0.4      1323  1.0      1334  1.1      1409  1.1      1421  1.2      1319  1.1
   2323  0.9      1845  0.5      1853  0.4      2004  0.4      2000  0.3      2032  0.2
               31 0123  0.8                  31 0104  1.0
                  0630  0.2                     0753  0.0
                  1404  1.0                     1415  1.1
                  1938  0.4                     2038  0.3
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2020   UBATUBA - BASE NORTE DO IOUSP   2020

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

IOUSP-BASE NORTE   NIVEL MEDIO .66 M   CARTA 1613

OUTUBRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0130	1.2	16	0141	1.2
	0849	0.0		0845	-0.1
	1345	1.2		1441	1.1
	2056	0.2		2049	0.1
02	0204	1.2	17	0200	1.3
	0923	0.0		0926	0.0
	1413	1.2		1423	1.0
	2124	0.2		2128	0.1
03	0238	1.2	18	0221	1.3
	0958	0.1		1009	0.1
	1447	1.2		1436	1.0
	2154	0.2		2208	0.2
04	0308	1.2	19	0256	1.2
	1034	0.2		1058	0.3
	1515	1.1		1500	1.0
	2226	0.2		2254	0.2
05	0339	1.1	20	0328	1.1
	1104	0.3		1145	0.4
	1545	1.1		1524	0.9
	2300	0.3		2347	0.2
06	0406	1.1	21	0408	1.0
	1143	0.4		0724	0.8
	1606	1.0		0853	0.8
	2343	0.3		1236	0.6
				1558	0.9
07	0436	1.0	22	0045	0.3
	1221	0.5		0458	0.9
	1626	0.9		0736	0.7
				1021	0.8
				1336	0.7
				1624	0.8
				2039	0.5
				2213	0.5
08	0038	0.4	23	0151	0.3
	0508	0.9		0554	0.8
	1311	0.6		0758	0.7
	1651	0.9		1119	0.9
				1504	0.8
				1651	0.8
				2100	0.6
				2304	0.6
09	0143	0.4	24	0302	0.3
	0558	0.8		0715	0.7
	0749	0.7		1200	0.9
	1045	0.8		2102	0.7
	1419	0.6		2345	0.7
	1709	0.8			
10	0256	0.4	25	0415	0.3
	1128	1.0		1223	0.9
	1543	0.6		1809	0.6
	1756	0.7		2358	0.8
	2002	0.6			
	2308	0.7			
11	0411	0.3	26	0523	0.3
	1206	1.1		1245	0.9
	1709	0.5		1839	0.5
	2354	0.8		2353	0.9
12	0523	0.2	27	0613	0.2
	1249	1.2		1243	1.0

NOVEMBRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0211	1.2	16	0206	1.2
	0930	0.2		0956	0.3
	1415	1.2		1404	1.0
	2134	0.2		2156	0.1
02	0247	1.2	17	0241	1.1
	1004	0.3		1043	0.4
	1449	1.1		1436	1.0
	2208	0.2		2245	0.1
03	0317	1.1	18	0317	1.1
	1041	0.3		1126	0.5
	1513	1.1		1506	1.0
	2247	0.2		2336	0.2
04	0353	1.1	19	0402	1.0
	1115	0.4		0700	0.8
	1541	1.0		0809	0.8
	2330	0.2		1211	0.6
				1549	0.9
05	0423	1.0	20	0028	0.2
	1200	0.5		0453	0.9
	1602	0.9		0715	0.8
				0943	0.8
				1302	0.7
				1624	0.9
06	0019	0.3	21	0126	0.3
	0504	0.9		0545	0.8
	1256	0.6		0756	0.7
	1624	0.9		1039	0.8
				1400	0.7
				1719	0.8
07	0123	0.3	22	0232	0.3
	0656	0.8		0656	0.7
	0956	0.9		0817	0.7
	1400	0.6		1111	0.8
	1700	0.8		1523	0.7
				1911	0.7
08	0236	0.3	23	0338	0.3
	1053	1.0		1145	0.8
	1509	0.6		1653	0.6
	1758	0.7		2215	0.8
	1928	0.7			
	2226	0.7			
09	0349	0.3	24	0441	0.3
	1138	1.1		1156	0.8
	1623	0.5		1741	0.5
	2321	0.9		2313	0.9
10	0454	0.2	25	0538	0.3
	1217	1.1		1136	0.9
	1724	0.4		1815	0.4
				2341	1.0
11	0004	1.0	26	0623	0.3
	0554	0.1		1145	1.0
	1258	1.1		1847	0.3
	1811	0.3			
12	0041	1.1	27	0017	1.0
	0647	0.0		0706	0.2

DEZEMBRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0232	1.1	16	0239	1.1
	0943	0.3		1028	0.5
	1424	1.1		1424	1.0
	2154	0.1		2234	0.0
02	0308	1.1	17	0317	1.0
	1021	0.4		1108	0.5
	1458	1.1		1504	1.0
	2238	0.1		2319	0.1
03	0347	1.1	18	0400	1.0
	1100	0.5		1149	0.6
	1524	1.0		1553	1.0
	2321	0.2			
04	0424	1.0	19	0008	0.1
	1149	0.5		0441	0.9
	1558	0.9		1221	0.6
				1638	0.9
05	0009	0.2	20	0100	0.2
	0515	0.9		0523	0.9
	1239	0.5		1258	0.6
	1628	0.9		1732	0.9
06	0106	0.2	21	0154	0.3
	0902	0.9		0615	0.8
	1336	0.6		1349	0.6
	1711	0.8		1845	0.8
07	0208	0.3	22	0253	0.4
	1006	1.0		0719	0.8
	1436	0.5		1451	0.6
	2128	0.8		2017	0.8
08	0311	0.3	23	0351	0.4
	1102	1.0		0845	0.8
	1538	0.5		1602	0.5
	2247	0.9		2215	0.8
09	0417	0.2	24	0451	0.4
	1156	1.0		1017	0.8
	1639	0.4		1711	0.4
	2343	0.9		2334	0.9
10	0521	0.2	25	0543	0.4
	1243	1.0		1113	0.9
	1736	0.4		1804	0.3
11	0034	1.0	26	0023	0.9
	0621	0.2		0632	0.3
	1323	1.0		1151	1.0
	1830	0.3		1851	0.2
12	0119	1.1	27	0054	1.0
	0715	0.2		0715	0.3

Time	Ht	Time	Ht	Time	Ht	Time	Ht	Time	Ht	Time	Ht
1809	0.4	1902	0.4	1339	1.1	1215	1.0	1358	1.0	1226	1.0
		1858	0.2	1923	0.2			1919	0.2	1934	0.2
13 0030	1.0	28 0011	1.0	13 0111	1.1	28 0051	1.1	13 0156	1.1	28 0128	1.1
0621	0.1	0700	0.2	0736	0.0	0749	0.2	0806	0.2	0800	0.3
1323	1.2	1228	1.0	1409	1.1	1249	1.1	1417	0.9	1302	1.0
1851	0.3	1928	0.3	1941	0.2	1958	0.2	2008	0.1	2015	0.1
14 0100	1.1	29 0038	1.1	14 0126	1.2	29 0123	1.1	14 0230	1.1	29 0204	1.1
0709	0.0	0741	0.1	0821	0.0	0824	0.2	0858	0.3	0845	0.3
1358	1.2	1245	1.1	1424	1.0	1319	1.1	1323	0.9	1338	1.1
1930	0.2	1956	0.2	2024	0.1	2038	0.1	2058	0.0	2058	0.0
15 0126	1.2	30 0108	1.2	15 0138	1.2	30 0158	1.1	15 0215	1.1	30 0236	1.1
0758	-0.1	0815	0.1	0906	0.1	0902	0.2	0945	0.4	0924	0.3
1430	1.2	1313	1.1	1347	1.0	1354	1.1	1353	0.9	1411	1.1
2008	0.2	2026	0.2	2108	0.1	2113	0.1	2147	0.0	2143	0.0
		31 0141	1.2							31 0315	1.1
		0854	0.1							1004	0.4
		1347	1.2							1451	1.1
		2058	0.2							2224	0.0

2020   PORTO DE SANTOS - TORRE GRANDE   2020

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

PORTO DE SANTOS   NIVEL MEDIO .77 M   CARTA 1701

JANEIRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0113	0.2	16	0109	0.3
	0604	1.2		0734	1.0
	1130	0.6		1258	0.6
	1841	0.9		1802	1.0
02	0200	0.3	17	0206	0.4
	0654	1.1		0824	0.9
	1219	0.7		1400	0.6
	2136	0.9		2132	0.9
03	0251	0.3	18	0306	0.5
	0753	1.1		1047	0.9
	1402	0.7		1519	0.6
	1645	0.7		2341	1.0
	1758	0.7			
	2247	1.0			
04	0339	0.4	19	0419	0.6
	0902	1.0		1226	0.9
	1819	0.6		1643	0.5
	2341	1.1			
05	0436	0.4	20	0058	1.0
	1023	1.0		0738	0.6
	1826	0.5		1308	1.0
				1745	0.4
06	0030	1.2	21	0154	1.1
	0539	0.4		0823	0.6
	1134	1.1		1345	1.1
	1823	0.4		1836	0.2
07	0117	1.3	22	0236	1.2
	0641	0.3		0824	0.5
	1228	1.1		1413	1.2
	1841	0.3		1919	0.1
08	0202	1.4	23	0247	1.2
	0734	0.3		0811	0.5
	1309	1.2		1443	1.2
	1915	0.2		2006	0.0
09	0251	1.5	24	0239	1.3
	0821	0.3		0836	0.5
	1341	1.2		1508	1.3
	1958	0.1		2053	0.0
10	0336	1.5	25	0258	1.3
	0900	0.3		0904	0.4
	1415	1.3		1534	1.3
	2041	0.0		2138	-0.1
11	0417	1.5	26	0323	1.4
	0939	0.3		0932	0.4
	1451	1.3		1558	1.3
	2130	0.0		2223	0.0
12	0458	1.5	27	0354	1.4
	1017	0.4		1000	0.4
	1521	1.2		1619	1.3
	2223	0.0		2308	0.0
13	0539	1.4	28	0423	1.4
	1054	0.4		1024	0.4
	1600	1.2		1645	1.2
	2319	0.1		2356	0.1
14	0615	1.3	29	0458	1.4
	1130	0.5		1045	0.5
	1634	1.1		1708	1.2
15	0013	0.2	30	0041	0.2

FEVEREIRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0209	0.4	16	0234	0.7
	0656	1.1		0539	0.8
	1230	0.6		0947	0.7
	2209	0.9		1136	0.7
				1443	0.6
				1908	0.9
				2138	0.8
02	0302	0.5	17	0038	1.0
	0754	1.0		0819	0.7
	1413	0.6		1223	0.8
	2338	1.0		1602	0.5
03	0406	0.5	18	0126	1.1
	0911	0.9		0824	0.6
	1604	0.6		1258	1.0
				1713	0.4
04	0032	1.1	19	0202	1.2
	0523	0.5		0845	0.6
	1104	0.9		1326	1.1
	1724	0.5		1813	0.2
05	0119	1.3	20	0230	1.2
	0641	0.4		0849	0.5
	1236	1.0		1354	1.2
	1817	0.3		1904	0.1
06	0204	1.4	21	0239	1.3
	0738	0.4		0817	0.5
	1328	1.1		1421	1.3
	1904	0.2		1949	0.0
07	0249	1.5	22	0232	1.3
	0821	0.3		0821	0.4
	1408	1.2		1449	1.4
	1949	0.0		2030	-0.1
08	0328	1.6	23	0241	1.4
	0853	0.3		0847	0.3
	1430	1.3		1511	1.4
	2036	0.0		2111	-0.1
09	0404	1.6	24	0302	1.4
	0928	0.3		0911	0.3
	1500	1.3		1539	1.4
	2123	-0.1		2154	-0.1
10	0441	1.5	25	0326	1.5
	1000	0.3		0938	0.3
	1524	1.3		1600	1.4
	2211	-0.1		2238	0.0
11	0509	1.4	26	0356	1.5
	1032	0.3		1000	0.3
	1556	1.3		1624	1.4
	2300	0.0		2319	0.1
12	0532	1.3	27	0423	1.4
	1104	0.4		1019	0.3
	1621	1.3		1649	1.3
	2349	0.2			
13	0553	1.1	28	0000	0.2
	1141	0.4		0456	1.4
	1654	1.2		1038	0.4
				1709	1.2
14	0038	0.4	29	0047	0.4
	0609	1.0		0526	1.2
	1221	0.5		1104	0.4
	1721	1.1		1732	1.1
15	0126	0.5			

MARCO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0136	0.5	16	0156	0.8
	0604	1.1		0400	0.9
	1139	0.5		0856	0.6
	1754	1.0		1121	0.7
				1419	0.5
				1824	0.9
				2119	0.8
02	0234	0.6	17	0056	1.0
	0654	1.0		0821	0.6
	1326	0.6		1200	0.8
	1821	0.8		1539	0.5
	2343	1.0		2013	0.8
03	0349	0.6	18	0126	1.1
	0817	0.8		0809	0.6
	1509	0.6		1230	1.0
				1649	0.4
04	0034	1.1	19	0154	1.2
	0534	0.6		0815	0.5
	1211	0.9		1256	1.1
	1649	0.5		1751	0.2
05	0113	1.3	20	0202	1.2
	0656	0.5		0815	0.5
	1253	1.0		1323	1.3
	1804	0.3		1841	0.1
06	0156	1.5	21	0202	1.3
	0739	0.4		0754	0.4
	1332	1.2		1351	1.4
	1854	0.2		1924	0.0
07	0234	1.6	22	0200	1.3
	0811	0.3		0804	0.3
	1404	1.3		1417	1.5
	1939	0.0		2006	0.0
08	0308	1.6	23	0211	1.4
	0838	0.2		0823	0.3
	1428	1.4		1447	1.5
	2024	-0.1		2049	0.0
09	0341	1.6	24	0232	1.5
	0908	0.2		0849	0.2
	1449	1.4		1511	1.5
	2109	-0.1		2128	0.0
10	0408	1.5	25	0256	1.5
	0936	0.2		0911	0.2
	1513	1.5		1541	1.5
	2153	-0.1		2206	0.1
11	0426	1.4	26	0321	1.5
	1006	0.2		0932	0.2
	1538	1.4		1604	1.4
	2234	0.1		2245	0.2
12	0441	1.2	27	0351	1.4
	1041	0.3		0951	0.3
	1602	1.4		1630	1.3
	2313	0.3		2324	0.3
13	0454	1.1	28	0415	1.4
	1117	0.3		1011	0.3
	1632	1.3		1656	1.2
	2358	0.5			
14	0458	1.0	29	0006	0.4
	1204	0.4		0451	1.3
	1702	1.2		1039	0.4
				1721	1.1
15	0045	0.7	30	0058	0.5

0653	1.1		0532	1.3	0623	0.9		0443	0.9	0519	1.1
1209	0.6		1108	0.5	1317	0.6		1306	0.5	1132	0.5
1709	1.1		1734	1.1	1802	1.0		1739	1.0	1753	1.0
					2134	0.8		2104	0.8		
					2304	0.9		2358	0.9		
		31	0123	0.3						31 0202	0.7
			0609	1.2						0558	0.9
			1136	0.5						1313	0.5
			1808	1.0						2330	1.0

2020   PORTO DE SANTOS - TORRE GRANDE   2020

             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

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     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 0332 0.7 16 0111 1.1  01 0623 0.6 16 0054 1.0  01 0036 1.2 16 0647 0.5
   0739 0.8    0739 0.6     1106 0.9    0700 0.6     0634 0.4    1221 1.2
   1454 0.5    1151 1.0     1558 0.4    1138 1.1     1147 1.2    1745 0.4
              1611 0.3                 1632 0.3     1741 0.3
02 0015 1.2 17 0124 1.1  02 0030 1.3 17 0023 1.0  02 0113 1.3 17 0011 1.1
   0624 0.6    0739 0.5     0647 0.5    0702 0.5     0645 0.3    0656 0.4
   1145 0.9    1215 1.1     1145 1.1    1208 1.2     1224 1.3    1304 1.3
   1617 0.4    1711 0.2     1713 0.3    1728 0.3     1839 0.3    1847 0.3
03 0058 1.3 18 0126 1.1  03 0104 1.4 18 0021 1.1  03 0149 1.3 18 0049 1.2
   0700 0.5    0736 0.5     0704 0.4    0708 0.4     0709 0.2    0709 0.3
   1228 1.0    1247 1.3     1224 1.2    1247 1.3     1306 1.3    1349 1.4
   1739 0.3    1808 0.2     1817 0.2    1824 0.2     1930 0.3    1941 0.3
04 0136 1.5 19 0117 1.2  04 0141 1.4 19 0045 1.2  04 0221 1.3 19 0121 1.2
   0728 0.3    0730 0.4     0723 0.3    0719 0.3     0741 0.1    0726 0.2
   1304 1.2    1315 1.4     1254 1.3    1321 1.4     1336 1.3    1432 1.4
   1839 0.1    1858 0.1     1908 0.1    1915 0.2     2015 0.3    2026 0.3
05 0208 1.6 20 0123 1.3  05 0211 1.4 20 0111 1.3  05 0245 1.2 20 0145 1.3
   0749 0.2    0741 0.3     0741 0.2    0734 0.2     0819 0.1    0754 0.1
   1332 1.3    1349 1.5     1326 1.4    1358 1.4     1415 1.3    1515 1.4
   1926 0.0    1941 0.1     1949 0.1    1958 0.2     2054 0.4    2106 0.3
06 0241 1.6 21 0141 1.4  06 0238 1.4 21 0136 1.4  06 0306 1.2 21 0211 1.3
   0815 0.2    0800 0.2     0808 0.1    0753 0.2     0902 0.0    0826 0.1
   1404 1.4    1419 1.5     1358 1.4    1438 1.5     1454 1.3    1600 1.4
   2009 -0.1   2023 0.0     2028 0.1    2039 0.2     2126 0.5    2143 0.3
07 0308 1.5 22 0202 1.4  07 0258 1.3 22 0200 1.4  07 0321 1.1 22 0241 1.3
   0838 0.1    0821 0.2     0839 0.1    0813 0.2     0953 0.1    0908 0.1
   1424 1.5    1453 1.5     1424 1.4    1511 1.4     1528 1.3    1643 1.4
   2049 -0.1   2102 0.1     2108 0.2    2119 0.2     2200 0.6    2219 0.3
08 0330 1.4 23 0224 1.5  08 0311 1.2 23 0224 1.4  08 0339 1.1 23 0308 1.3
   0908 0.1    0843 0.2     0917 0.1    0841 0.1     1049 0.1    0958 0.1
   1451 1.5    1521 1.5     1500 1.4    1551 1.4     1608 1.3    1724 1.4
   2128 0.0    2139 0.1     2145 0.4    2154 0.3     2224 0.6    2254 0.4
09 0343 1.3 24 0253 1.5  09 0323 1.1 24 0254 1.4  09 0349 1.0 24 0343 1.2
   0941 0.2    0904 0.2     1004 0.1    0913 0.2     1145 0.1    1058 0.2
   1513 1.5    1553 1.4     1532 1.3    1630 1.4     1649 1.2    1808 1.3
   2206 0.2    2217 0.2     2215 0.5    2232 0.3     2251 0.7    2330 0.5
10 0356 1.2 25 0315 1.4  10 0336 1.0 25 0319 1.3  10 0338 1.0 25 0411 1.1
   1017 0.2    0926 0.2     1058 0.2    0958 0.2     1238 0.2    1202 0.2
   1547 1.4    1621 1.4     1606 1.3    1711 1.3     1726 1.2    1854 1.2
   2245 0.4    2251 0.3     2249 0.7    2309 0.5     2300 0.7
11 0402 1.1 26 0347 1.3  11 0330 1.0 26 0354 1.2  11 0330 1.0 26 0009 0.6
   1104 0.3    0956 0.3     1158 0.2    1056 0.3     1324 0.2    0449 1.0
   1613 1.3    1654 1.3     1649 1.2    1802 1.2     1809 1.1    1302 0.3
   2313 0.6    2332 0.4     2302 0.8    2353 0.6     2308 0.7    1947 1.1
12 0400 1.0 27 0411 1.2  12 0302 1.0 27 0419 1.1  12 0343 0.9 27 0100 0.7
   1202 0.3    1041 0.3     1256 0.3    1206 0.3     0700 0.8    0530 0.9
   1653 1.2    1734 1.1     1732 1.1    1909 1.1     0926 0.9    1402 0.3
   2053 0.8                 2108 0.8                 1411 0.2    2049 1.0
   2158 0.8                                          1900 1.1
   2347 0.8                                          2328 0.8
13 0334 1.0 28 0021 0.6  13 0300 1.0 28 0047 0.7  13 0347 0.8 28 0208 0.7
   0954 0.6    0447 1.1     0754 0.7    0449 1.0     0626 0.8    0951 1.0
   1304 0.4    1156 0.4     0956 0.8    1315 0.3     1017 1.0    1500 0.4
   1730 1.1    1834 1.0     1353 0.3    2045 1.1     1500 0.3    2223 1.0
   2054 0.8                 1821 1.0                 2000 1.0
                            2138 0.8
14 0306 1.0 29 0124 0.7  14 0254 0.9 29 0200 0.8  14 0632 0.7 29 0404 0.7
   0811 0.6    0509 0.9     0709 0.7    0453 0.8     1100 1.1    1043 1.0
   1049 0.7    1317 0.5     1036 0.9    0630 0.8     1553 0.3    1602 0.4
   1406 0.4    2241 1.0     1447 0.3    0930 0.9     2115 1.0
   1819 0.9                 1928 0.9    1421 0.4
   2109 0.8                 2204 0.8    2236 1.1
15 0100 1.0 30 0308 0.8  15 0104 0.9 30 0600 0.7  15 0638 0.6 30 0008 1.0
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0749	0.6	0458	0.8	0700	0.7	1028	1.0	1141	1.1
1119	0.9	0700	0.8	1104	1.0	1528	0.3	1645	0.4
1509	0.4	1002	0.8	1539	0.3	2345	1.2	2253	1.0
1947	0.8	1439	0.4	2113	0.9				
2121	0.8	2348	1.2	2234	0.9				

0532	0.5	
1132	1.1	
1711	0.5	

31	0617	0.6
	1111	1.1
	1636	0.3

2020   PORTO DE SANTOS - TORRE GRANDE   2020

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

PORTO DE SANTOS   NIVEL MEDIO .77 M   CARTA 1701

			JULHO						AGOSTO						SETEMBRO		
DIA	**HORA**	**ALT**	**DIA**	**HORA**	**ALT**	**DIA**	**HORA**	**ALT**	**DIA**	**HORA**	**ALT**	**DIA**	**HORA**	**ALT**	**DIA**	**HORA**	**ALT**
	H M	M		H M	M		H M	M		H M	M		H M	M		H M	M
01	0102	1.1	16	0634	0.5	01	0209	1.2	16	0139	1.1	01	0236	1.4	16	0217	1.4
	0609	0.4		1300	1.2		0706	0.1		0651	0.2		0809	-0.1		0758	-0.1
	1230	1.2		1830	0.4		1502	1.3		1428	1.5		1438	1.4		1517	1.6
	1830	0.5					2132	0.5		2011	0.3		2039	0.4		2053	0.2
02	0145	1.1	17	0047	1.1	02	0238	1.3	17	0206	1.2	02	0258	1.5	17	0234	1.5
	0643	0.2		0641	0.3		0751	0.0		0726	0.1		0853	-0.1		0839	-0.1
	1345	1.2		1351	1.3		1524	1.3		1506	1.6		1451	1.4		1545	1.5
	2017	0.5		1932	0.4		2047	0.5		2045	0.3		2102	0.3		2121	0.1
03	0219	1.2	18	0128	1.1	03	0300	1.3	18	0228	1.3	03	0317	1.5	18	0258	1.5
	0721	0.1		0708	0.2		0830	-0.1		0809	-0.1		0932	-0.1		0921	-0.1
	1449	1.2		1436	1.4		1519	1.3		1545	1.6		1511	1.4		1608	1.4
	2026	0.5		2019	0.3		2102	0.5		2117	0.2		2124	0.3		2151	0.2
04	0247	1.2	19	0149	1.2	04	0321	1.3	19	0247	1.4	04	0343	1.5	19	0319	1.5
	0804	0.0		0739	0.1		0913	-0.1		0854	-0.1		1013	0.0		1004	0.0
	1530	1.3		1517	1.5		1521	1.4		1617	1.6		1539	1.5		1623	1.3
	2049	0.5		2056	0.3		2123	0.4		2147	0.2		2151	0.3		2223	0.2
05	0311	1.2	20	0217	1.3	05	0343	1.4	20	0311	1.4	05	0402	1.4	20	0347	1.5
	0849	0.0		0817	0.0		1000	-0.1		0939	-0.1		1056	0.1		1047	0.2
	1521	1.3		1600	1.5		1545	1.4		1647	1.5		1606	1.4		1639	1.1
	2115	0.5		2132	0.3		2151	0.4		2215	0.2		2209	0.3		2258	0.3
06	0332	1.2	21	0241	1.3	06	0402	1.3	21	0336	1.4	06	0426	1.3	21	0409	1.4
	0938	0.0		0904	0.0		1047	0.0		1026	0.0		1143	0.2		1126	0.4
	1534	1.3		1639	1.5		1609	1.4		1709	1.4		1638	1.4		1653	1.0
	2145	0.5		2206	0.3		2211	0.4		2247	0.3		2224	0.3		2341	0.4
07	0353	1.2	22	0309	1.3	07	0423	1.3	22	0402	1.4	07	0451	1.2	22	0443	1.2
	1026	0.0		0954	0.0		1134	0.1		1115	0.1		1228	0.4		1209	0.7
	1604	1.3		1713	1.5		1643	1.4		1730	1.2		1706	1.3		1649	0.9
	2208	0.5		2238	0.3		2234	0.4		2317	0.3		2239	0.4			
08	0408	1.2	23	0343	1.3	08	0445	1.2	23	0430	1.3	08	0509	1.1	23	0039	0.4
	1115	0.0		1047	0.0		1217	0.2		1206	0.3		1315	0.5		0509	1.1
	1638	1.3		1749	1.4		1711	1.3		1753	1.1		1743	1.2		0847	0.8
	2234	0.5		2308	0.4		2251	0.4		2354	0.4		2304	0.5		1117	0.9
																1313	0.8
																1553	0.9
																2054	0.6
																2258	0.7
09	0428	1.1	24	0411	1.2	09	0504	1.1	24	0458	1.2	09	0530	1.0	24	0154	0.5
	1206	0.1		1143	0.1		1302	0.3		1300	0.5		1409	0.6		0556	0.9
	1709	1.3		1819	1.3		1749	1.3		1806	0.9		1819	1.0		0854	0.7
	2254	0.5		2343	0.5		2309	0.5					2332	0.6		1234	1.0
																2023	0.6
																2351	0.8
10	0447	1.1	25	0447	1.2	10	0526	1.0	25	0043	0.5	10	0543	0.8	25	0309	0.5
	1256	0.2		1239	0.2		1353	0.4		0528	1.0		0804	0.8		0721	0.7
	1749	1.3		1853	1.1		1823	1.2		0911	0.8		1136	0.9		0839	0.7
	2311	0.6					2332	0.5		1039	0.8		1515	0.6		1308	1.1
										1400	0.7		1915	0.9		2006	0.6
										1751	0.8						
										2206	0.7						
11	0506	1.0	26	0019	0.5	11	0541	0.9	26	0200	0.6	11	0249	0.6	26	0019	1.0
	1341	0.2		0519	1.1		1443	0.5		0611	0.9		0654	0.7		0430	0.4
	1824	1.2		1334	0.4		1906	1.0		0904	0.8		1215	1.1		1339	1.2
	2334	0.6		1926	1.0					1209	0.9		1653	0.6		2009	0.5
										1643	0.8						
										2054	0.7						
12	0511	0.9	27	0109	0.6	12	0026	0.6	27	0011	0.8	12	0017	0.8	27	0049	1.1
	1424	0.3		0613	1.0		0649	0.8		0336	0.6		0434	0.5		0534	0.2
	1908	1.1		1430	0.5		1130	1.1		1308	1.1		1258	1.3		1356	1.2
				2019	0.9		1541	0.6		2026	0.6		1843	0.5		2021	0.5
							2008	0.9									
13	0015	0.7	28	0234	0.6	13	0353	0.6	28	0054	0.9	13	0051	1.0	28	0111	1.3
	0458	0.8		1119	0.9		0519	0.7		0502	0.4		0608	0.4		0623	0.1
	0604	0.8		1538	0.6		1217	1.1		1353	1.2		1336	1.4		1400	1.2

18

	1028	1.0					1656	0.6		2043	0.5		1926	0.4		2017	0.5
	1511	0.4					2206	0.9									
	2004	1.0					2306	0.9									
14	0621	0.7	29	0013	0.9	14	0034	0.9	29	0121	1.1	14	0121	1.1	29	0138	1.4
	1124	1.0		0409	0.6		0623	0.5		0604	0.3		0636	0.2		0706	0.0
	1606	0.5		1245	1.0		1302	1.2		1419	1.2		1408	1.5		1351	1.3
	2117	1.0		1956	0.6		1830	0.5		2058	0.5		1958	0.3		2000	0.4
15	0632	0.6	30	0104	1.0	15	0106	1.0	30	0149	1.2	15	0147	1.3	30	0202	1.5
	1213	1.1		0530	0.4		0621	0.4		0651	0.1		0717	0.0		0747	-0.1
	1713	0.5		1347	1.1		1349	1.4		1443	1.3		1447	1.6		1356	1.4
	2321	1.0		2043	0.6		1932	0.4		2102	0.5		2028	0.2		2013	0.3
			31	0143	1.1				31	0211	1.3						
				0623	0.3					0730	0.0						
				1432	1.2					1443	1.3						
				2108	0.5					2030	0.4						

```
2020                      PORTO DE SANTOS - TORRE GRANDE                        2020

            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 0228  1.5  16 0213  1.5  01 0302  1.5  16 0247  1.4  01 0330  1.4  16 0324  1.3
   0824 -0.1     0819 -0.1     0917  0.1     0917  0.3     0936  0.3     0939  0.6
   1415  1.4     1509  1.4     1434  1.4     1517  1.1     1438  1.3     1545  1.1
   2036  0.2     2053  0.1     2056  0.2     2149  0.1     2104  0.2     2226  0.0
02 0256  1.5  17 0234  1.5  02 0334  1.5  17 0317  1.4  02 0406  1.4  17 0400  1.2
   0904  0.0     0900  0.0     0954  0.2     0956  0.5     1013  0.3     1006  0.6
   1439  1.5     1526  1.3     1500  1.4     1534  1.0     1506  1.3     1600  1.0
   2100  0.2     2124  0.1     2119  0.2     2239  0.1     2143  0.2     2319  0.1
03 0319  1.5  18 0302  1.5  03 0402  1.4  18 0356  1.3  03 0447  1.3  18 0432  1.2
   0943  0.0     0939  0.2     1034  0.3     1023  0.6     1051  0.4     1034  0.7
   1504  1.5     1543  1.2     1528  1.3     1539  1.0     1539  1.2     1608  1.0
   2123  0.2     2202  0.1     2147  0.3     2336  0.2     2232  0.2
04 0347  1.5  19 0326  1.4  04 0436  1.3  19 0430  1.2  04 0532  1.2  19 0009  0.1
   1023  0.2     1013  0.4     1115  0.4     1051  0.8     1134  0.4     0509  1.2
   1530  1.4     1558  1.1     1600  1.3     1449  0.9     1608  1.1     1053  0.7
   2143  0.2     2247  0.2     2224  0.3                  2334  0.3     1551  1.0
05 0409  1.4  20 0400  1.3  05 0509  1.2  20 0032  0.2  05 0630  1.1  20 0100  0.2
   1102  0.3     1054  0.6     1202  0.6     0511  1.1     1223  0.6     0553  1.1
   1600  1.4     1600  1.0     1628  1.1     0854  0.8     1647  1.0     1058  0.7
   2200  0.3     2339  0.3     2323  0.4     1436  1.0                  1551  0.9
                                            1947  0.7
                                            2126  0.8
06 0438  1.3  21 0430  1.2  06 0602  1.0  21 0126  0.3  06 0043  0.3  21 0153  0.2
   1149  0.4     1117  0.8     1300  0.7     0602  1.0     0754  1.1     0638  1.1
   1630  1.3     1528  0.9     1700  1.0     0908  0.8     1323  0.7     1121  0.7
   2221  0.4                                0945  1.0     1730  0.9     1606  0.9
                                            1906  0.7                  1806  0.8
                                            2211  0.9                  2147  0.9
07 0502  1.2  22 0041  0.4  07 0045  0.4  22 0221  0.3  07 0151  0.4  22 0243  0.3
   1241  0.5     0506  1.1     0951  1.0     0706  0.9     0936  1.1     0732  1.0
   1702  1.2     0823  0.8     1415  0.7     0951  0.8     1445  0.7     1349  0.7
   2254  0.4     1445  1.0     1738  0.8     1304  0.9     2139  0.9     1613  0.8
                 2002  0.6                  1853  0.7                  1804  0.8
                 2217  0.7                  2251  1.0                  2239  1.0
08 0532  1.0  23 0147  0.4  08 0202  0.5  23 0315  0.3  08 0258  0.4  23 0334  0.3
   1343  0.7     0558  0.9     1109  1.1     0843  0.9     1054  1.1     0841  1.0
   1738  1.0     0847  0.8     1749  0.7     1021  0.9     1730  0.6     1808  0.6
                 1245  1.0     2228  0.9     1245  0.9     2238  1.1     2323  1.1
                 1941  0.6                  1854  0.6
                 2302  0.8                  2321  1.1
09 0026  0.5  24 0253  0.4  09 0323  0.4  24 0413  0.3  09 0406  0.3  24 0428  0.4
   0621  0.9     0719  0.8     1156  1.2     1121  1.0     1151  1.2     1006  1.0
   0753  0.9     0853  0.8     1819  0.6     1854  0.6     1751  0.5     1819  0.5
   1111  1.0     1300  1.1     2321  1.0     2354  1.2     2324  1.2
   1458  0.7     1928  0.6
   1823  0.8     2339  1.0
10 0215  0.6  25 0358  0.3  10 0443  0.3  25 0509  0.3  10 0515  0.3  25 0006  1.2
   1158  1.1     1309  1.1     1236  1.3     1138  1.1     1238  1.2     0530  0.4
   1739  0.7     1936  0.6     1843  0.4     1851  0.5     1821  0.4     1130  1.1
   2330  0.8                                                           1832  0.4
11 0358  0.5  26 0004  1.1  11 0002  1.2  26 0028  1.3  11 0013  1.3  26 0053  1.3
   1236  1.3     0458  0.2     0547  0.2     0604  0.2     0617  0.3     0628  0.3
   1843  0.5     1315  1.1     1309  1.4     1217  1.2     1321  1.2     1228  1.1
                 1938  0.5     1902  0.3     1902  0.4     1847  0.3     1853  0.3
12 0009  1.0  27 0032  1.2  12 0036  1.3  27 0104  1.4  12 0053  1.3  27 0134  1.3
   0524  0.3     0553  0.2     0638  0.1     0654  0.2     0709  0.3     0721  0.3
   1308  1.4     1302  1.2     1343  1.4     1249  1.2     1358  1.2     1308  1.2
   1909  0.4     1928  0.4     1924  0.2     1919  0.3     1923  0.2     1917  0.3
13 0043  1.2  28 0100  1.4  13 0115  1.4  28 0143  1.4  13 0136  1.3  28 0215  1.4
   0623  0.2     0638  0.1     0721  0.1     0738  0.2     0751  0.3     0804  0.3
   1343  1.5     1302  1.3     1415  1.4     1319  1.3     1432  1.2     1334  1.2
   1936  0.3     1928  0.3     1951  0.1     1941  0.2     2004  0.1     1943  0.2
14 0119  1.3  29 0130  1.4  14 0143  1.5  29 0217  1.4  14 0226  1.3  29 0256  1.4
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   0704  0.0      0719  0.1      0804  0.1      0819  0.2      0828  0.4      0845  0.3
   1413  1.5      1321  1.3      1439  1.3      1345  1.3      1502  1.2      1402  1.3
   1958  0.2      1945  0.3      2024  0.1      2006  0.2      2049  0.0      2015  0.1
15 0141  1.4   30 0200  1.5   15 0215  1.5   30 0254  1.4   15 0256  1.3   30 0338  1.4
   0739 -0.1      0800  0.0      0841  0.2      0856  0.2      0906  0.5      0923  0.3
   1443  1.5      1345  1.4      1502  1.2      1409  1.3      1523  1.1      1426  1.3
   2023  0.1      2009  0.2      2104  0.1      2032  0.2      2136  0.0      2054  0.1
               31 0232  1.5                                               31 0415  1.4
                  0839  0.1                                                  0958  0.3
                  1408  1.4                                                  1500  1.3
                  2032  0.2                                                  2138  0.1
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2020                    CANANEIA - BASE SUL DO IOUSP                    2020

            LATITUDE 25  1.0 S     LONGITUDE  47 55.5 W    FUSO +   3 HORAS

IOUSP-BASE SUL                    NIVEL MEDIO   .80 M                    CARTA 1703

        JANEIRO                    FEVEREIRO                    MARCO

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

01 0043 0.3  16 0002 0.4    01 0141 0.5  16 0300 1.0    01 0013 0.5  16 0247 1.2
   0658 1.3     0753 1.2       0758 1.2     0623 0.6       0715 1.1     0628 0.6
   1115 0.5     1141 0.6       1211 0.5     0934 0.9       1147 0.4     0919 0.8
   1506 1.1     1654 0.9       1602 0.9     1256 0.6       1600 0.9     1245 0.5
   1806 0.8     1956 1.1       1839 0.8     1639 0.8       1756 0.9     2058 0.9
   2045 1.0                    2145 1.0     1824 0.8       2036 1.0     2347 0.8
                                            2145 1.0
02 0151 0.4  17 0028 0.6    02 0338 0.6  17 0032 0.8    02 0100 0.7  17 0311 1.2
   0749 1.2     0224 0.6       0858 1.1     0328 1.0       0349 0.7     0717 0.5
   1200 0.6     0445 0.5       1302 0.6     0723 0.5       0819 1.0     1051 0.9
   1539 1.0     0851 1.1       1617 0.8     1100 0.9       1223 0.5     1439 0.6
   1843 0.8     1223 0.6       1854 0.7     1438 0.6       1602 0.8     2239 1.0
   2149 1.0     1600 0.9       2254 1.0     1658 0.7       1808 0.8
                1756 0.9                    1841 0.7       2158 1.0
                2102 1.0                    2306 1.0
03 0306 0.4  18 0104 0.7    03 0523 0.5  18 0115 1.0    03 0545 0.6  18 0013 0.9
   0845 1.2     0254 0.7       1004 1.1     0353 1.0       0938 1.0     0339 1.1
   1251 0.6     0602 0.5       1408 0.7     0809 0.5       1317 0.6     0758 0.5
   1602 0.9     0958 1.0       1613 0.7     1215 1.0       1553 0.7     1200 1.0
   1900 0.7     1324 0.7       1900 0.6     1830 0.5       1834 0.6     1741 0.5
   2249 1.0     1624 0.8       2358 1.1                    2334 1.1
                1832 0.8
                2213 1.1
04 0419 0.4  19 0158 0.8    04 0632 0.5  19 0021 1.1    04 0639 0.5  19 0017 1.1
   0947 1.1     0315 0.8       1111 1.1     0853 0.5       1053 1.0     0200 1.1
   1356 0.7     0708 0.5       1915 0.5     1313 1.2       1900 0.4     0311 1.1
   1617 0.8     1113 1.0                    1849 0.3                    0828 0.5
   1909 0.7     1847 0.7                                                1256 1.2
   2341 1.1     2321 1.1                                                1823 0.3
05 0523 0.4  20 0808 0.5    05 0054 1.3  20 0109 1.2    05 0047 1.3  20 0100 1.2
   1049 1.2     1228 1.1       0724 0.4     0919 0.5       0723 0.4     0847 0.5
   1913 0.6     1838 0.5       1217 1.2     1400 1.3       1200 1.1     1339 1.3
                               1945 0.3     1923 0.2       1934 0.3     1900 0.2
06 0026 1.2  21 0021 1.2    06 0143 1.4  21 0151 1.3    06 0130 1.4  21 0132 1.3
   0619 0.4     0900 0.5       0811 0.3     0926 0.5       0802 0.3     0830 0.5
   1149 1.2     1326 1.2       1313 1.3     1443 1.4       1300 1.3     1417 1.4
   1915 0.5     1856 0.3       2015 0.2     2000 0.0       2008 0.1     1938 0.0
07 0111 1.3  22 0111 1.3    07 0224 1.5  22 0224 1.4    07 0208 1.6  22 0202 1.4
   0711 0.3     0943 0.5       0854 0.3     0813 0.5       0841 0.2     0758 0.4
   1243 1.3     1413 1.3       1408 1.4     1521 1.4       1353 1.4     1458 1.5
   1930 0.4     1930 0.2       2053 0.1     2036 0.0       2049 0.0     2011 0.0
08 0156 1.4  23 0158 1.3    08 0306 1.6  23 0300 1.5    08 0249 1.6  23 0236 1.5
   0800 0.3     1013 0.6       0932 0.4     0823 0.4       0909 0.3     0806 0.3
   1332 1.3     1500 1.3       1456 1.4     1558 1.5       1438 1.5     1534 1.5
   1958 0.3     2009 0.1       2130 0.0     2109 -0.1      2124 0.0     2047 0.0
09 0241 1.5  24 0241 1.4    09 0351 1.6  24 0334 1.5    09 0326 1.7  24 0306 1.6
   0845 0.3     0808 0.6       0951 0.4     0849 0.3       0923 0.3     0826 0.2
   1419 1.4     1541 1.4       1541 1.4     1634 1.4       1519 1.5     1606 1.5
   2034 0.2     2049 0.0       2204 0.0     2145 0.0       2156 0.0     2117 0.0
10 0323 1.5  25 0317 1.5    10 0430 1.6  25 0406 1.5    10 0406 1.7  25 0338 1.5
   0924 0.4     0824 0.5       0947 0.4     0911 0.3       0915 0.3     0854 0.2
   1506 1.4     1617 1.4       1621 1.4     1704 1.4       1600 1.5     1643 1.5
   2113 0.1     2126 0.0       2232 0.1     2215 0.0       2215 0.1     2149 0.0
11 0406 1.5  26 0356 1.5    11 0509 1.6  26 0439 1.5    11 0451 1.6  26 0406 1.5
   0949 0.4     0856 0.4       0954 0.4     0941 0.2       0923 0.3     0915 0.2
   1553 1.4     1658 1.3       1700 1.4     1741 1.3       1641 1.5     1711 1.4
   2154 0.1     2204 0.0       2247 0.2     2247 0.1       2208 0.3     2213 0.1
12 0451 1.6  27 0434 1.5    12 0554 1.5  27 0511 1.4    12 0532 1.4  27 0438 1.4
   1002 0.5     0924 0.4       1011 0.4     1008 0.4       0951 0.3     0947 0.2
   1636 1.3     1736 1.3       1743 1.3     1808 1.2       1717 1.4     1747 1.3
   2232 0.1     2243 0.1       2258 0.3     2313 0.2       2209 0.4     2241 0.2
13 0532 1.5  28 0508 1.5    13 0639 1.3  28 0549 1.3    13 0613 1.2  28 0508 1.3
   1011 0.5     0958 0.3       1045 0.4     1039 0.2       1019 0.2     1011 0.2
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	Time	Ht		Time	Ht		Time	Ht		Time	Ht		Time	Ht		Time	Ht
	1717	1.3		1808	1.2		1821	1.2		1847	1.1		1758	1.3		1817	1.2
	2308	0.2		2319	0.1		2308	0.4		2345	0.4		2226	0.5		2302	0.4
14	0613	1.5	29	0547	1.4	14	0208	0.6	29	0626	1.2	14	0145	0.8	29	0547	1.2
	1036	0.5		1028	0.3		0338	0.6		1108	0.3		0402	0.7		1045	0.3
	1802	1.2		1453	1.1		0724	1.1		1545	1.0		0704	1.0		1858	1.1
	2336	0.3		1636	1.0		1115	0.4		1711	1.0		1058	0.3		2324	0.5
				1851	1.1		1908	1.1		1932	1.1		1843	1.2			
				2358	0.2		2332	0.6					2253	0.6			
15	0700	1.3	30	0623	1.3	15	0228	0.8				15	0208	1.0	30	0639	1.1
	1102	0.5		1100	0.3		0508	0.6					0523	0.6		1117	0.4
	1854	1.1		1511	1.1		0821	1.0					0804	0.9		1953	1.1
				1734	1.0		1200	0.5					1145	0.4		2351	0.7
				1938	1.0		1611	1.0					1939	1.0			
							1751	0.9					2311	0.7			
							2013	1.0									
							2358	0.7									
			31	0043	0.4										31	0238	0.8
				0706	1.2											0445	0.8
				1138	0.4											0754	0.9
				1543	1.0											1200	0.5
				1808	0.9											1543	0.8
				2036	1.0											1700	0.7
																2102	1.0

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2020                    CANANEIA - BASE SUL DO IOUSP                    2020

        LATITUDE 25  1.0 S    LONGITUDE  47 55.5 W    FUSO +   3 HORAS

IOUSP-BASE SUL                  NIVEL MEDIO   .80 M                 CARTA 1703

        ABRIL                         MAIO                         JUNHO

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

01 0008 0.9 16 0002 0.9   01 0609 0.5 16 0106 0.9   01 0651 0.4 16 0715 0.5
   0154 0.9    0323 1.2      1015 1.0    0326 1.0      1132 1.3    1238 1.3
   0549 0.6    0738 0.5      1749 0.3    0738 0.5      1913 0.3    1800 0.3
   0913 0.9    1138 1.0      2332 1.3    1154 1.2
   1300 0.6    1643 0.4                  1654 0.3
   1500 0.7    2308 1.1                  2308 1.2
   1749 0.6
   2254 1.1
02 0628 0.5 17 0117 1.0   02 0647 0.4 17 0745 0.5   02 0051 1.3 17 0009 1.3
   1036 1.0    0309 1.0      1111 1.2    1234 1.3      0709 0.3    0658 0.4
   1826 0.4    0800 0.5      1839 0.2    1747 0.3      1215 1.4    1315 1.3
              1226 1.2                                 2019 0.3    1854 0.3
              1741 0.3
03 0032 1.3 18 0017 1.2   03 0036 1.4 18 0009 1.3   03 0138 1.4 18 0058 1.3
   0704 0.3    0811 0.5      0713 0.3    0726 0.4      0723 0.3    0702 0.3
   1141 1.1    1308 1.3      1202 1.3    1311 1.4      1304 1.4    1400 1.4
   1906 0.2    1824 0.2      1928 0.1    1834 0.2      2123 0.4    1943 0.3
04 0111 1.4 19 0100 1.3   04 0117 1.5 19 0056 1.4   04 0219 1.4 19 0141 1.4
   0741 0.3    0751 0.4      0739 0.3    0708 0.3      0734 0.2    0723 0.2
   1234 1.3    1351 1.4      1251 1.4    1353 1.4      1358 1.4    1449 1.4
   1951 0.1    1906 0.1      2019 0.1    1917 0.2      2224 0.4    2028 0.3
05 0149 1.6 20 0134 1.4   05 0200 1.5 20 0132 1.4   05 0302 1.4 20 0217 1.4
   0809 0.2    0732 0.3      0754 0.2    0715 0.2      0758 0.1    0754 0.1
   1321 1.4    1426 1.5      1336 1.5    1432 1.4      1453 1.4    1534 1.4
   2032 0.0    1945 0.1      2108 0.2    1956 0.2      2330 0.6    2106 0.4
06 0223 1.6 21 0204 1.5   06 0241 1.5 21 0204 1.5   06 0349 1.3 21 0256 1.4
   0834 0.2    0743 0.2      0800 0.2    0738 0.2      0828 0.1    0826 0.1
   1408 1.5    1502 1.5      1421 1.5    1511 1.4      1545 1.4    1613 1.5
   2113 0.0    2019 0.0      2158 0.3    2032 0.2      2023 0.6    2136 0.4
                                                       2258 0.8
07 0302 1.7 22 0238 1.5   07 0319 1.5 22 0239 1.5   07 0047 0.7 22 0332 1.4
   0839 0.3    0802 0.2      0811 0.2    0802 0.1      0430 1.2    0906 0.1
   1454 1.5    1543 1.5      1509 1.5    1554 1.4      0908 0.1    1658 1.5
   2149 0.1    2053 0.1      2239 0.5    2104 0.2      1630 1.4    2202 0.4
                                                       2054 0.6
08 0345 1.6 23 0306 1.5   08 0402 1.4 23 0309 1.4   08 0004 0.9 23 0408 1.3
   0839 0.2    0824 0.1      0838 0.1    0832 0.1      0206 0.8    0953 0.2
   1538 1.5    1615 1.5      1600 1.5    1634 1.4      0513 1.1    1738 1.5
   2147 0.3    2121 0.1      2051 0.5    2132 0.3      0956 0.1    2223 0.5
                                                       1709 1.4
                                                       2124 0.5
09 0424 1.5 24 0338 1.5   09 0053 0.7 24 0345 1.4   09 0058 1.1 24 0451 1.2
   0858 0.2    0854 0.1      0451 1.2    0904 0.1      0338 0.8    1041 0.2
   1617 1.5    1654 1.4      0909 0.1    1709 1.4      0604 1.0    1813 1.5
   2123 0.4    2151 0.2      1647 1.4    2200 0.4      1051 0.2    2247 0.5
                            2106 0.5                   1753 1.4
                                                       2200 0.5
10 0506 1.3 25 0404 1.4   10 0013 0.9 25 0415 1.3   10 0141 1.1 25 0539 1.1
   0924 0.2    0919 0.1      0238 0.8    0943 0.2      0451 0.8    1145 0.3
   1700 1.4    1726 1.4      0538 1.1    1751 1.4      0704 0.9    1856 1.4
   2136 0.5    2211 0.3      0954 0.2    2224 0.5      1154 0.3    2309 0.6
                            1726 1.4                   1830 1.3
                            2138 0.5                   2239 0.5
11 0049 0.8 26 0438 1.3   11 0100 1.1 26 0454 1.2   11 0215 1.2 26 0649 1.0
   0241 0.7    0954 0.2      0400 0.8    1023 0.3      0547 0.7    1332 0.4
   0556 1.1    1800 1.3      0630 1.0    1828 1.3      0815 0.9    1943 1.3
   1002 0.2    2238 0.4      1045 0.3    2253 0.6      1304 0.3    2345 0.7
   1743 1.3                  1806 1.3                  1908 1.3
   2158 0.5                  2206 0.6                  2311 0.6
12 0113 1.0 27 0509 1.2   12 0145 1.2 27 0549 1.0   12 0254 1.2 27 0254 0.9
   0406 0.7    1024 0.3      0506 0.7    1115 0.4      0621 0.7    0453 0.8
   0653 1.0    1843 1.2      0739 0.9    1909 1.3      0924 0.9    0806 1.0
   1047 0.3    2300 0.6      1147 0.3    2315 0.7      1409 0.4    1523 0.4
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1823 1.2		1853 1.2		1956 1.2	2034 1.2
2221 0.6		2243 0.6		2358 0.6	
13 0156 1.2	28 0604 1.0	13 0217 1.2	28 0217 0.9	13 0319 1.1	28 0021 0.8
0519 0.6	1104 0.4	0602 0.6	0411 0.8	0656 0.6	0256 0.9
0756 0.8	1928 1.2	0856 0.9	0711 0.9	1023 1.0	0539 0.7
1138 0.4	2321 0.7	1311 0.4	1326 0.5	1509 0.4	0913 1.1
1909 1.1		1939 1.1	2002 1.3	2053 1.2	1647 0.4
2254 0.6		2317 0.7	2354 0.8		2139 1.1
14 0228 1.3	29 0209 0.9	14 0254 1.2	29 0200 0.9	14 0051 0.7	29 0253 0.8
0615 0.6	0447 0.8	0645 0.5	0511 0.7	0345 0.9	0608 0.6
0909 0.8	0734 0.9	1004 0.9	0845 1.0	0711 0.6	1011 1.1
1254 0.5	1158 0.5	1445 0.4	1600 0.4	1111 1.1	1806 0.5
2009 1.0	2030 1.1	2038 1.1	2106 1.2	1608 0.4	2302 1.1
2323 0.8	2356 0.9			2158 1.1	
15 0300 1.2	30 0153 0.9	15 0002 0.8	30 0143 0.9	15 0723 0.6	30 0638 0.5
0702 0.5	0538 0.6	0317 1.1	0554 0.6	1156 1.2	1104 1.2
1034 0.9	0902 0.9	0711 0.5	0953 1.0	1704 0.4	1928 0.5
1502 0.5	1653 0.5	1104 1.0	1706 0.3	2308 1.2	
2134 1.0	2154 1.2	1556 0.4	2224 1.2		
		2151 1.1			
			31 0623 0.5		
			1045 1.2		
			1809 0.3		
			2352 1.3		

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2020                      CANANEIA - BASE SUL DO IOUSP                      2020

              LATITUDE 25  1.0 S    LONGITUDE  47 55.5 W    FUSO +   3 HORAS

  IOUSP-BASE SUL                 NIVEL MEDIO  .80 M                    CARTA 1703

          JULHO                      AGOSTO                      SETEMBRO

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

  01 0021  1.1  16 0706  0.4  01 0158  1.3  16 0102  1.3  01 0300  1.5  16 0211  1.5
     0654  0.4     1249  1.3     0724  0.2     0749  0.2     0811 -0.1     0847 -0.1
     1156  1.3     1856  0.5     1334  1.3     1406  1.4     1449  1.4     1506  1.6
     2041  0.4                   2213  0.5     2045  0.4     2019  0.5     2115  0.3
  02 0119  1.2  17 0026  1.2  02 0239  1.4  17 0153  1.4  02 0336  1.5  17 0253  1.5
     0708  0.3     0711  0.3     0754  0.1     0817  0.1     0847 -0.1     0919  0.0
     1249  1.3     1338  1.3     1423  1.4     1453  1.5     1524  1.5     1551  1.7
     2139  0.5     1956  0.4     2243  0.6     2117  0.3     2039  0.3     2124  0.3
  03 0206  1.3  18 0117  1.3  03 0315  1.4  18 0234  1.4  03 0406  1.5  18 0328  1.6
     0726  0.2     0734  0.2     0828  0.0     0853  0.0     0917  0.0     0941  0.1
     1343  1.3     1424  1.4     1509  1.4     1536  1.6     1600  1.5     1632  1.6
     2232  0.5     2045  0.4     2030  0.6     2143  0.3     2104  0.3     2126  0.3
  04 0253  1.3  19 0202  1.4  04 0356  1.4  19 0311  1.5  04 0441  1.4  19 0406  1.5
     0756  0.1     0804  0.1     0904  0.0     0926  0.0     0953  0.0     0947  0.2
     1438  1.4     1511  1.5     1553  1.5     1613  1.6     1636  1.5     1711  1.5
     2317  0.6     2123  0.4     2053  0.5     2153  0.3     2132  0.2     2143  0.3
  05 0334  1.3  20 0247  1.4  05 0432  1.4  20 0351  1.5  05 0509  1.3  20 0447  1.4
     0832  0.1     0841  0.1     0943  0.0     1000  0.0     1023  0.1     0953  0.3
     1526  1.4     1558  1.5     1630  1.5     1656  1.6     1706  1.4     1758  1.3
     2021  0.7     2149  0.4     2115  0.4     2156  0.4     2200  0.2     2208  0.2
     2254  0.7
  06 0000  0.7  21 0323  1.4  06 0506  1.3  21 0426  1.4  06 0545  1.2  21 0524  1.3
     0411  1.3     0921  0.1     1021  0.0     1024  0.1     1056  0.2     1004  0.5
     0911  0.0     1641  1.6     1704  1.5     1738  1.6     1739  1.4     1306  0.8
     1611  1.4     2208  0.4     2151  0.3     2208  0.3     2224  0.2     1513  0.6
     2053  0.6                                                            1845  1.1
                                                                          2243  0.3
  07 0456  1.2  22 0402  1.4  07 0545  1.2  22 0502  1.4  07 0311  1.1  22 0611  1.2
     0958  0.1     1004  0.1     1100  0.1     1039  0.3     0415  1.1     1026  0.6
     1654  1.5     1717  1.6     1739  1.5     1813  1.4     0621  1.1     1347  1.0
     2121  0.5     2217  0.4     2215  0.3     2232  0.3     1124  0.4     1643  0.7
                                                            1811  1.3     1938  1.0
                                                            2256  0.3     2315  0.4
  08 0109  1.0  23 0443  1.3  08 0238  1.1  23 0547  1.3  08 0313  1.0  23 0719  1.0
     0249  0.9     1047  0.2     0426  1.0     1056  0.4     0521  1.0     1056  0.7
     0539  1.1     1758  1.6     0624  1.1     1900  1.3     0715  1.0     1417  1.1
     1045  0.1     2232  0.5     1141  0.2     2300  0.4     1200  0.5     1756  0.6
     1730  1.4                   1811  1.4                   1853  1.2     2045  0.8
     2158  0.4                   2251  0.3                   2323  0.4
  09 0153  1.1  24 0523  1.2  09 0300  1.1  24 0641  1.1  09 0328  1.0  24 0004  0.5
     0406  0.9     1126  0.2     0534  1.0     1111  0.5     0558  0.9     0353  0.8
     0624  1.0     1838  1.5     0717  1.0     1404  0.7     0830  1.0     0521  0.8
     1134  0.2     2256  0.5     1223  0.3     1615  0.6     1243  0.7     0847  0.9
     1804  1.4                   1849  1.3     1951  1.1     1947  1.1     1126  0.8
     2230  0.4                   2317  0.3     2336  0.4                   1456  1.2
                                                                          1856  0.5
                                                                          2209  0.8
  10 0221  1.1  25 0611  1.1  10 0317  1.1  25 0349  1.0  10 0000  0.5  25 0143  0.6
     0513  0.9     1202  0.4     0606  0.9     0519  0.9     0338  0.9     0323  0.7
     0723  1.0     1917  1.3     0824  1.0     0756  1.0     0609  0.7     0553  0.6
     1228  0.3     2321  0.5     1313  0.5     1141  0.7     0953  1.0     1006  1.0
     1843  1.4                   1930  1.2     1439  0.9     1706  0.7     1204  0.9
     2304  0.4                   2354  0.4     1747  0.6     2056  1.0     1528  1.2
                                               2053  0.9                   1945  0.5
                                                                          2343  1.0
  11 0256  1.1  26 0721  1.1  11 0343  1.0  26 0015  0.5  11 0047  0.6  26 0604  0.4
     0602  0.8     1224  0.5     0634  0.8     0354  0.9     0323  0.8     1126  1.0
     0830  0.9     1409  0.5     0934  1.0     0602  0.8     0624  0.6     1309  1.0
     1324  0.3     1528  0.5     1423  0.6     0913  1.0     1108  1.1     1551  1.1
     1921  1.3     2006  1.2     2019  1.1     1208  0.8     1817  0.6     2021  0.5
     2343  0.5     2358  0.6                   1508  1.0     2217  1.0
                                               1858  0.6
                                               2215  0.9
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Day	Time	Ht	Day	Time	Ht	Day	Time	Ht	Day	Time	Ht	Day	Time	Ht	Day	Time	Ht
12	0321	1.1	27	0339	0.9	12	0032	0.5	27	0132	0.7	12	0647	0.4	27	0041	1.2
	0636	0.7		0536	0.9		0356	0.9		0349	0.7		1213	1.2		0623	0.3
	0934	1.0		0839	1.0		0649	0.7		0626	0.6		1906	0.5		1223	1.2
	1421	0.4		1256	0.6		1038	1.0		1036	1.0		2345	1.1		2053	0.5
	2006	1.2		1447	0.7		1621	0.6		1256	0.9						
				1706	0.6		2126	1.0		1547	1.1						
				2106	1.0					1958	0.5						
13	0019	0.6	28	0047	0.6	13	0124	0.7	28	0000	1.0	13	0708	0.2	28	0121	1.3
	0351	1.0		0351	0.8		0354	0.8		0641	0.5		1302	1.4		0647	0.1
	0656	0.7		0606	0.7		0658	0.6		1145	1.1		1949	0.4		1304	1.3
	1026	1.0		0949	1.1		1134	1.1		1400	1.0					2102	0.5
	1523	0.5		1323	0.8		1806	0.6		1606	1.1						
	2102	1.1		1511	0.8		2251	1.1		2043	0.5						
				1841	0.6												
				2232	1.0												
14	0111	0.7	29	0213	0.7	14	0704	0.4	29	0100	1.1	14	0045	1.2	29	0200	1.4
	0402	0.8		0334	0.7		1226	1.2		0653	0.3		0739	0.1		0715	0.0
	0704	0.6		0636	0.6		1911	0.5		1239	1.2		1347	1.5		1343	1.4
	1115	1.1		1049	1.1					2117	0.5		2023	0.3		2006	0.5
	1628	0.5		1406	0.9												
	2209	1.1		1554	0.9												
				1954	0.5												
15	0708	0.5	30	0006	1.0	15	0002	1.1	30	0147	1.3	15	0132	1.4	30	0238	1.5
	1202	1.2		0651	0.5		0721	0.3		0711	0.1		0811	0.0		0749	0.0
	1743	0.5		1147	1.2		1317	1.3		1324	1.3		1426	1.6		1417	1.5
	2324	1.2		1509	0.9		2002	0.4		2145	0.5		2054	0.3		1958	0.4
				1615	1.0												
				2053	0.5												
			31	0109	1.1				31	0221	1.4						
				0704	0.3					0741	0.0						
				1241	1.2					1408	1.4						
				2138	0.5					2130	0.6						

2020   CANANEIA - BASE SUL DO IOUSP   2020

LATITUDE 25 1.0 S   LONGITUDE 47 55.5 W   FUSO + 3 HORAS

IOUSP-BASE SUL   NIVEL MEDIO .80 M   CARTA 1703

OUTUBRO

DIA	HORA (H M)	ALT (M)	DIA	HORA (H M)	ALT (M)
01	0308	1.5	16	0223	1.6
	0819	-0.1		0909	0.1
	1454	1.5		1523	1.6
	2015	0.3		2047	0.2
02	0345	1.5	17	0304	1.6
	0853	0.0		0921	0.2
	1526	1.5		1606	1.5
	2045	0.2		2058	0.2
03	0413	1.5	18	0349	1.5
	0921	0.0		0902	0.4
	1600	1.5		1654	1.4
	2108	0.2		2119	0.2
04	0449	1.4	19	0428	1.5
	0953	0.1		0908	0.5
	1632	1.4		1204	0.7
	2138	0.1		1358	0.6
				1739	1.2
				2154	0.2
05	0517	1.3	20	0511	1.3
	1015	0.2		0932	0.5
	1700	1.3		1247	0.9
	2202	0.2		1523	0.7
				1826	1.1
				2228	0.2
06	0554	1.2	21	0600	1.2
	1045	0.4		1000	0.6
	1736	1.2		1323	1.1
	2232	0.2		1643	0.7
				1921	0.9
				2309	0.3
07	0641	1.1	22	0656	1.1
	1108	0.5		1032	0.7
	1815	1.1		1404	1.2
	2302	0.3		1749	0.6
				2036	0.9
08	0445	0.9	23	0011	0.5
	0743	1.0		0802	1.0
	1139	0.7		1106	0.7
	1911	1.0		1447	1.3
	2338	0.5		1843	0.5
				2158	0.9
09	0313	0.8	24	0232	0.6
	0508	0.7		0915	1.0
	0858	1.0		1154	0.8
	1211	0.8		1515	1.2
	1358	0.9		1923	0.5
	1711	0.7		2313	1.0
	2032	0.9			
10	0021	0.6	25	0454	0.4
	0253	0.7		1036	1.0
	0541	0.6		1300	0.9
	1023	1.1		1543	1.1
	1804	0.6		1958	0.5
	2200	1.0			
11	0608	0.4	26	0009	1.2
	1145	1.2		0536	0.3

NOVEMBRO

DIA	HORA (H M)	ALT (M)	DIA	HORA (H M)	ALT (M)
01	0353	1.5	16	0328	1.5
	0856	0.1		0823	0.5
	1526	1.4		1051	0.6
	2049	0.1		1228	0.6
				1634	1.3
				2108	0.2
02	0424	1.4	17	0413	1.5
	0923	0.2		0845	0.6
	1558	1.4		1139	0.8
	2113	0.1		1358	0.7
				1719	1.2
				2147	0.2
03	0500	1.4	18	0500	1.4
	0953	0.3		0908	0.6
	1630	1.3		1223	1.0
	2147	0.2		1511	0.7
				1808	1.1
				2228	0.2
04	0539	1.3	19	0549	1.3
	1015	0.4		0947	0.6
	1702	1.2		1309	1.2
	2215	0.2		1624	0.7
				1904	1.0
				2319	0.3
05	0617	1.2	20	0636	1.2
	1047	0.5		1021	0.6
	1747	1.1		1358	1.2
	2253	0.3		1728	0.7
				2009	0.9
06	0708	1.1	21	0028	0.4
	1111	0.7		0724	1.1
	1851	1.0		1102	0.6
	2332	0.5		1441	1.2
				1819	0.6
				2126	0.9
07	0811	1.1	22	0208	0.5
	1156	0.8		0824	1.0
	1358	0.9		1153	0.7
	1656	0.8		1515	1.1
	2008	0.9		1902	0.6
				2239	1.0
08	0041	0.6	23	0341	0.4
	0158	0.6		0930	1.1
	0439	0.5		1254	0.8
	0924	1.1		1553	1.0
	1743	0.6		1938	0.6
	2134	1.0		2336	1.1
09	0526	0.3	24	0445	0.4
	1047	1.2		1039	1.1
	1817	0.5		1553	0.8
	2245	1.1		1956	0.6
10	0611	0.2	25	0019	1.2
	1153	1.3		0534	0.3
	1853	0.4		1138	1.2
	2339	1.2		1951	0.5
11	0658	0.1	26	0100	1.3
	1243	1.4		0615	0.2

DEZEMBRO

DIA	HORA (H M)	ALT (M)	DIA	HORA (H M)	ALT (M)
01	0406	1.4	16	0402	1.5
	0908	0.3		0826	0.6
	1536	1.4		1115	0.8
	2102	0.1		1338	0.7
				1702	1.2
				2154	0.1
02	0447	1.4	17	0449	1.4
	0939	0.4		0900	0.6
	1608	1.3		1215	1.0
	2139	0.2		1453	0.8
				1754	1.1
				2238	0.2
03	0523	1.4	18	0528	1.4
	1006	0.4		0941	0.5
	1649	1.2		1308	1.1
	2215	0.2		1600	0.8
				1845	1.1
				2324	0.2
04	0602	1.3	19	0609	1.3
	1038	0.5		1015	0.5
	1732	1.1		1400	1.2
	2300	0.3		1702	0.8
				1941	1.0
05	0653	1.3	20	0021	0.3
	1108	0.6		0654	1.2
	1830	1.1		1100	0.5
	2354	0.4		1445	1.2
				1800	0.8
				2047	1.0
06	0745	1.2	21	0124	0.4
	1153	0.7		0743	1.2
	1439	0.8		1145	0.6
	1558	0.8		1519	1.1
	1947	1.0		1845	0.7
				2153	1.1
07	0334	0.4	22	0239	0.4
	0843	1.2		0838	1.1
	1258	0.8		1234	0.6
	1358	0.8		1558	1.0
	1704	0.7		1911	0.7
	2058	1.0		2254	1.1
08	0449	0.4	23	0353	0.4
	0953	1.2		0939	1.1
	1751	0.6		1341	0.7
	2202	1.1		1623	0.8
				1936	0.6
				2345	1.1
09	0549	0.3	24	0458	0.4
	1102	1.2		1043	1.1
	1824	0.5		1938	0.6
	2302	1.2			
10	0647	0.2	25	0028	1.2
	1208	1.3		0553	0.4
	1856	0.4		1143	1.2
	2356	1.3		1908	0.5
11	0745	0.2	26	0108	1.3
	1304	1.3		0641	0.3

	1847	0.5		1141	1.1		1921	0.3		1224	1.3
	2317	1.1		2021	0.5					1858	0.5
12	0645	0.2	27	0056	1.3	12	0026	1.4	27	0139	1.4
	1236	1.4		0611	0.2		0743	0.1		0656	0.2
	1919	0.3		1226	1.3		1330	1.5		1308	1.4
				2021	0.5		1949	0.3		1906	0.3
13	0015	1.2	28	0134	1.4	13	0111	1.5	28	0213	1.5
	0717	0.0		0649	0.1		0830	0.1		0732	0.2
	1317	1.5		1306	1.4		1413	1.5		1349	1.4
	1954	0.3		1923	0.4		2009	0.3		1930	0.2
14	0102	1.4	29	0206	1.5	14	0158	1.5	29	0253	1.5
	0758	0.0		0721	0.0		0923	0.2		0806	0.2
	1358	1.6		1345	1.4		1500	1.5		1424	1.4
	2021	0.2		1928	0.3		2021	0.2		2000	0.2
15	0145	1.5	30	0245	1.5	15	0245	1.5	30	0328	1.5
	0836	0.0		0756	0.0		1034	0.4		0839	0.2
	1441	1.6		1419	1.5		1549	1.4		1500	1.4
	2041	0.2		1954	0.2		2039	0.2		2030	0.1
			31	0315	1.5						
				0824	0.1						
				1454	1.5						
				2017	0.2						

	1924	0.3		1234	1.3
				1858	0.4
12	0047	1.4	27	0153	1.4
	0847	0.3		0723	0.3
	1356	1.4		1319	1.3
	1949	0.3		1923	0.3
13	0136	1.5	28	0230	1.4
	0953	0.4		0802	0.3
	1447	1.3		1402	1.4
	2013	0.2		1954	0.2
14	0224	1.5	29	0309	1.5
	1104	0.5		0838	0.3
	1532	1.3		1445	1.4
	2039	0.2		2028	0.2
15	0313	1.5	30	0353	1.5
	0804	0.6		0909	0.4
	1002	0.7		1523	1.4
	1219	0.6		2106	0.1
	1615	1.3			
	2113	0.1			
			31	0430	1.5
				0939	0.4
				1602	1.3
				2149	0.1

```
2021                    UBATUBA - BASE NORTE DO IOUSP                    2021

         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            DIA            DIA            DIA            DIA            DIA
     H M   M       H M   M       H M   M       H M   M       H M   M       H M   M

01 0354  1.1  16 0349  1.0  01 0438  1.0  16 0428  1.0  01 0338  1.1  16 0326  1.1
   1049  0.4     1111  0.5     1143  0.4     1132  0.4     1034  0.2     1032  0.3
   1524  1.0     1553  1.1     1621  1.1     1649  1.1     1526  1.2     1551  1.2
   2308  0.1     2347  0.1                                2313  0.0     2321  0.2
02 0434  1.0  17 0421  1.0  02 0023  0.1  17 0036  0.3  02 0358  1.0  17 0400  1.1
   1128  0.4     1138  0.5     0504  0.9     0502  1.0     1109  0.3     1104  0.3
   1602  1.0     1632  1.1     1223  0.4     1211  0.4     1558  1.2     1617  1.1
   2358  0.1                   1658  1.1     1719  1.0     2358  0.2     2356  0.4
03 0521  1.0  18 0030  0.2  03 0109  0.2  18 0113  0.4  03 0415  0.9  18 0424  1.0
   1209  0.5     0500  0.9     0528  0.8     0536  0.9     1154  0.3     1147  0.4
   1639  1.0     1206  0.5     1309  0.5     1308  0.5     1626  1.1     1649  1.0
                 1713  1.0     1734  1.0     1754  0.9
04 0051  0.2  19 0111  0.3  04 0206  0.4  19 0202  0.5  04 0049  0.3  19 0036  0.5
   0751  0.9     0543  0.9     0600  0.7     0606  0.8     0445  0.9     0451  0.9
   1258  0.5     1254  0.5     0813  0.7     1413  0.5     1245  0.4     1239  0.4
   1717  0.9     1800  0.9     1026  0.7     1843  0.8     1704  1.0     1715  0.9
                               1409  0.5     2108  0.7
                               1817  0.9     2332  0.8
                               2109  0.8
                               2247  0.8
05 0145  0.2  20 0202  0.4  05 0311  0.5  20 0302  0.6  05 0143  0.5  20 0119  0.6
   0924  0.9     0624  0.8     0638  0.7     0649  0.8     0504  0.8     0506  0.9
   1353  0.5     1354  0.5     0849  0.6     1532  0.4     0821  0.6     1347  0.4
   1806  0.9     1858  0.8     1138  0.7                   1028  0.6     1758  0.8
                               1521  0.5                   1349  0.4     2019  0.7
                               1923  0.8                   1753  0.9     2306  0.8
                               2102  0.7                   2034  0.7
                                                           2311  0.8
06 0243  0.3  21 0258  0.5  06 0004  0.9  21 0013  0.8  06 0256  0.6  21 0221  0.6
   1039  0.9     0721  0.8     0443  0.5     0409  0.6     0528  0.7     0526  0.8
   1451  0.5     1500  0.5     0724  0.6     1130  0.7     0849  0.5     1458  0.4
   1911  0.8     2054  0.8     0904  0.6     1649  0.4     1136  0.7     2353  0.9
   2154  0.8     2208  0.8     1228  0.8                   1504  0.4
                               1645  0.4                   1856  0.7
                                                           2041  0.7
07 0347  0.3  22 0356  0.5  07 0102  1.0  22 0054  0.9  07 0013  0.9  22 0339  0.6
   1141  0.9     0853  0.8     0626  0.5     0530  0.6     0902  0.5     0558  0.7
   1554  0.5     1611  0.4     1308  0.8     1204  0.8     1217  0.7     0832  0.7
   2345  0.9                   1800  0.3     1756  0.3     1636  0.4     1119  0.7
                                                                        1611  0.4
08 0456  0.4  23 0019  0.8  08 0153  1.1  23 0123  1.0  08 0100  1.0  23 0024  1.0
   1232  0.9     0458  0.5     0728  0.5     0639  0.5     0745  0.6     0513  0.6
   1702  0.4     1043  0.8     1343  0.8     1232  0.9     1256  0.8     1156  0.8
                 1721  0.4     1900  0.1     1851  0.2     1753  0.3     1726  0.3
09 0051  1.0  24 0056  0.9  09 0228  1.1  24 0153  1.1  09 0138  1.1  24 0058  1.1
   0606  0.4     0558  0.5     0806  0.4     0726  0.4     0730  0.5     0623  0.5
   1313  0.9     1143  0.9     1351  0.9     1304  1.0     1315  0.9     1226  0.9
   1808  0.3     1819  0.3     1951  0.0     1939  0.0     1849  0.1     1824  0.1
10 0147  1.0  25 0132  1.0  10 0258  1.1  25 0219  1.2  10 0202  1.1  25 0128  1.2
   0711  0.4     0654  0.4     0847  0.4     0806  0.3     0756  0.4     0702  0.4
   1354  0.9     1223  0.9     1332  1.0     1336  1.1     1321  0.9     1256  1.0
   1906  0.2     1909  0.2     2036  0.0     2023  0.0     1936  0.0     1913  0.0
11 0234  1.1  26 0158  1.1  11 0308  1.1  26 0247  1.2  11 0221  1.1  26 0158  1.2
   0806  0.4     0743  0.4     0915  0.4     0847  0.3     0821  0.4     0739  0.3
   1409  0.9     1300  1.0     1353  1.1     1404  1.1     1315  1.0     1323  1.1
   2000  0.1     1958  0.1     2117 -0.1     2106 -0.1     2015  0.0     2000 -0.1
12 0313  1.1  27 0228  1.1  12 0236  1.1  27 0311  1.2  12 0209  1.1  27 0224  1.2
   0854  0.4     0826  0.3     0947  0.4     0921  0.2     0849  0.4     0813  0.2
   1324  0.9     1336  1.0     1423  1.1     1434  1.2     1338  1.1     1347  1.2
   2049  0.0     2043  0.0     2158 -0.1     2151 -0.1     2056  0.0     2045 -0.1
13 0345  1.1  28 0254  1.2  13 0254  1.1  28 0328  1.2  13 0202  1.1  28 0243  1.2
   0938  0.4     0908  0.3     1011  0.4     0956  0.2     0913  0.3     0851  0.2
   1353  1.0     1411  1.1     1500  1.2     1500  1.2     1406  1.2     1409  1.3
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      2136  0.0        2126  0.0        2241  0.0     2234 -0.1        2136  0.0        2124 -0.1
14 0313  1.1     29 0326  1.2     14 0321  1.1                     14 0223  1.1     29 0249  1.1
      1011  0.5        0949  0.3        1036  0.4                         0939  0.3        0928  0.2
      1426  1.0        1447  1.1        1538  1.2                         1443  1.2        1434  1.3
      2217  0.0        2208 -0.1        2315  0.1                         2209  0.0        2206  0.0
15 0317  1.1     30 0349  1.2     15 0358  1.1                     15 0256  1.1     30 0300  1.1
      1047  0.5        1024  0.3        1100  0.4                         1002  0.3        1004  0.2
      1506  1.1        1519  1.1        1609  1.1                         1513  1.2        1500  1.3
      2302  0.0        2254  0.0        2356  0.2                         2249  0.1        2253  0.1
                 31 0419  1.1                                                         31 0313  1.0
                       1102  0.3                                                            1047  0.2
                       1553  1.1                                                            1530  1.2
                       2340  0.0                                                            2338  0.3
```

2021   UBATUBA - BASE NORTE DO IOUSP   2021

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

IOUSP-BASE NORTE   NIVEL MEDIO .66 M   CARTA 1613

ABRIL

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0341	0.9	16	0354	1.0
	1134	0.3		1126	0.3
	1604	1.1		1624	1.0
02	0023	0.5	17	0000	0.5
	0402	0.9		0411	0.9
	1226	0.3		1215	0.3
	1647	1.0		1700	0.9
	1953	0.7			
	2158	0.8			
03	0121	0.6	18	0054	0.6
	0424	0.8		0428	0.9
	0813	0.5		1315	0.4
	1013	0.5		1745	0.8
	1336	0.4		1939	0.8
	1732	0.8		2224	0.8
	1958	0.7			
	2311	0.9			
04	0251	0.7	19	0156	0.7
	0441	0.8		0454	0.8
	0838	0.5		1430	0.4
	1113	0.6		2309	0.9
	1454	0.4			
	1845	0.7			
	2002	0.6			
05	0004	1.0	20	0306	0.6
	0853	0.6		0517	0.7
	1158	0.7		0802	0.6
	1615	0.3		1034	0.7
				1549	0.3
				2351	1.0
06	0043	1.0	21	0434	0.6
	0708	0.6		1124	0.8
	1228	0.8		1658	0.3
	1730	0.2			
07	0108	1.0	22	0023	1.1
	0702	0.5		0539	0.5
	1245	0.9		1202	0.9
	1824	0.2		1756	0.1
08	0128	1.0	23	0058	1.2
	0723	0.4		0623	0.4
	1238	1.0		1234	1.0
	1908	0.1		1849	0.0
09	0132	1.0	24	0132	1.2
	0751	0.3		0702	0.3
	1249	1.1		1302	1.1
	1953	0.0		1934	0.0
10	0111	1.1	25	0200	1.2
	0813	0.3		0743	0.2
	1313	1.2		1324	1.2
	2032	0.0		2017	-0.1
11	0124	1.1	26	0223	1.1
	0841	0.2		0821	0.1
	1347	1.2		1343	1.3
	2106	0.1		2100	0.0
12	0156	1.1	27	0215	1.0
	0908	0.2		0902	0.1
	1417	1.2		1408	1.3
	2145	0.1		2149	0.1

MAIO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0008	0.6	16	0354	0.9
	0336	0.9		1200	0.3
	1217	0.2		1658	0.9
	1636	0.9			
	1902	0.8			
	2147	0.9			
02	0106	0.7	17	0034	0.6
	0400	0.9		0411	0.9
	0819	0.5		1300	0.3
	0938	0.5		1854	0.8
	1323	0.3		2119	0.9
	1723	0.8			
	1923	0.7			
	2253	0.9			
03	0224	0.8	18	0132	0.6
	0426	0.8		0449	0.8
	0841	0.6		1404	0.3
	1041	0.6		2219	0.9
	1436	0.3			
	1947	0.7			
	2339	0.9			
04	0854	0.6	19	0238	0.6
	1121	0.7		0538	0.7
	1551	0.3		0738	0.7
				0924	0.7
				1511	0.3
				2306	1.0
05	0008	0.9	20	0345	0.5
	0556	0.6		1043	0.8
	1153	0.8		1619	0.2
	1658	0.3		2353	1.1
06	0036	0.9	21	0447	0.5
	0615	0.5		1130	0.9
	1200	0.9		1721	0.2
	1754	0.2			
07	0047	0.9	22	0032	1.1
	0645	0.4		0539	0.4
	1158	1.0		1209	1.0
	1843	0.2		1813	0.1
08	0024	1.0	23	0108	1.1
	0709	0.3		0626	0.3
	1221	1.1		1245	1.1
	1923	0.1		1906	0.1
09	0024	1.0	24	0145	1.1
	0739	0.2		0711	0.2
	1253	1.1		1317	1.1
	2000	0.1		1956	0.1
10	0056	1.1	25	0208	1.0
	0809	0.2		0758	0.1
	1323	1.2		1332	1.2
	2039	0.1		2045	0.1
11	0126	1.1	26	0136	0.9
	0845	0.2		0847	0.1
	1400	1.2		1356	1.2
	2113	0.2		2134	0.3
12	0200	1.1	27	0153	0.9
	0919	0.1		0934	0.1
	1434	1.2		1426	1.1
	2151	0.3		2219	0.4

JUNHO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0139	0.7	16	0102	0.5
	0458	0.8		0506	0.9
	1404	0.3		1343	0.3
	1819	0.7		2124	0.9
	2000	0.7			
	2258	0.8			
02	0239	0.7	17	0158	0.5
	0617	0.8		0606	0.8
	1509	0.3		1443	0.3
	2043	0.7		2228	0.9
	2334	0.8			
03	0358	0.6	18	0258	0.5
	0834	0.8		0945	0.8
	1613	0.3		1545	0.3
	2356	0.8		2321	1.0
04	0506	0.5	19	0358	0.5
	1030	0.8		1100	0.9
	1713	0.3		1647	0.2
	2343	0.8			
05	0551	0.4	20	0009	1.0
	1124	0.9		0458	0.4
	1804	0.3		1202	1.0
	2319	0.9		1749	0.2
06	0630	0.3	21	0058	1.0
	1204	1.0		0556	0.3
	1853	0.3		1258	1.0
	2353	1.0		1849	0.2
07	0706	0.3	22	0141	0.9
	1236	1.0		0653	0.2
	1932	0.3		1353	1.1
				1945	0.3
08	0026	1.0	23	0209	0.9
	0745	0.2		0745	0.1
	1313	1.1		1445	1.1
	2009	0.3		2038	0.3
09	0104	1.1	24	0132	0.9
	0823	0.1		0838	0.0
	1351	1.1		1536	1.1
	2051	0.3		2123	0.4
10	0141	1.1	25	0139	0.9
	0900	0.1		0924	0.0
	1424	1.1		1623	1.1
	2128	0.3		2208	0.4
11	0211	1.1	26	0208	0.9
	0943	0.1		1011	0.0
	1504	1.1		1515	1.1
	2204	0.4		2254	0.5
12	0249	1.1	27	0251	1.0
	1021	0.1		1102	0.0
	1539	1.1		1547	1.0
	2247	0.5		2334	0.6

```
13 0226 1.2    28 0219 1.0    13 0234 1.1    28 0213 0.9    13 0317 1.0    28 0332 1.0
   0939 0.2       0947 0.1       0954 0.1       1023 0.1       1104 0.1       1153 0.1
   1454 1.2       1438 1.2       1508 1.1       1506 1.1       1619 1.0       1621 0.9
   2215 0.2       2234 0.3       2224 0.4       2306 0.5       2326 0.5
14 0300 1.1    29 0243 1.0    14 0302 1.1    29 0253 0.9    14 0353 1.0    29 0004 0.6
   1009 0.2       1032 0.2       1034 0.2       1113 0.1       1153 0.2       0413 1.0
   1523 1.2       1509 1.1       1543 1.1       1551 1.0       1708 1.0       1243 0.2
   2251 0.3       2317 0.4       2300 0.5       1809 0.9                      1704 0.9
                                                1936 0.9
                                                2356 0.6
15 0326 1.1    30 0304 0.9    15 0328 1.0    30 0323 0.9    15 0009 0.5    30 0041 0.6
   1047 0.2       1121 0.2       1113 0.2       1206 0.1       0423 0.9       0504 1.0
   1556 1.1       1554 1.0       1617 1.0       1632 0.9       1245 0.2       1334 0.3
   2323 0.4       1951 0.8       2345 0.5       1849 0.8       1954 0.9       1751 0.8
                                                2100 0.9                      2151 0.7
                                             31 0047 0.7
                                                0404 0.9
                                                1304 0.2
                                                1719 0.8
                                                1917 0.7
                                                2206 0.8
```

2021 UBATUBA - BASE NORTE DO IOUSP 2021

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

IOUSP-BASE NORTE   NIVEL MEDIO .66 M   CARTA 1613

| | JULHO | | | | | AGOSTO | | | | | SETEMBRO | | | | |
DIA	HORA H M	ALT M	DIA	HORA H M	ALT M	DIA	HORA H M	ALT M	DIA	HORA H M	ALT M	DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0117	0.6	16	0117	0.5	01	0228	0.5	16	0249	0.5	01	0423	0.4	16	0036	0.8
	0604	0.9		0545	0.9		0738	0.8		0651	0.8		1245	0.9		0517	0.3
	1426	0.4		1404	0.3		1004	0.7		0856	0.7		1717	0.6		1311	1.1
	1843	0.8		2154	0.8		1136	0.7		1136	0.8		2354	0.8		1924	0.5
	2243	0.7					1528	0.5		1554	0.5						
							1953	0.8		1843	0.6						
										2054	0.6						
02	0211	0.6	17	0211	0.5	02	0349	0.5	17	0000	0.8	02	0538	0.3	17	0102	0.9
	0719	0.8		0632	0.9		1219	0.8		0404	0.4		1311	1.0		0621	0.2
	1524	0.4		1504	0.3		1636	0.5		1239	1.0		1832	0.5		1351	1.1
	1949	0.8		2302	0.8		2151	0.8		1756	0.6					1941	0.4
										2047	0.6						
03	0323	0.5	18	0313	0.5	03	0504	0.4	18	0051	0.8	03	0021	0.9	18	0123	0.9
	0902	0.8		0751	0.8		1258	0.9		0526	0.3		0634	0.2		0709	0.0
	1624	0.4		0858	0.8		1745	0.5		1324	1.1		1341	1.1		1409	1.1
	2108	0.8		1102	0.8		2328	0.8		1915	0.5		1915	0.4		2002	0.4
				1609	0.4												
04	0441	0.5	19	0002	0.9	04	0606	0.3	19	0124	0.8	04	0051	1.0	19	0121	1.0
	1147	0.8		0423	0.4		1330	1.0		0636	0.2		0721	0.1		0756	0.0
	1723	0.4		1221	0.9		1845	0.5		1406	1.1		1402	1.2		1419	1.1
	2230	0.8		1730	0.4					1956	0.5		1953	0.3		2030	0.3
05	0547	0.4	20	0054	0.9	05	0011	0.9	20	0153	0.9	05	0117	1.0	20	0124	1.1
	1234	0.9		0538	0.3		0658	0.2		0728	0.0		0804	0.0		0839	0.0
	1815	0.4		1321	1.0		1354	1.1		1445	1.2		1426	1.2		1349	1.1
	2326	0.9		1847	0.4		1932	0.4		2026	0.4		2026	0.3		2056	0.3
06	0638	0.3	21	0138	0.9	06	0049	1.0	21	0153	0.9	06	0149	1.1	21	0151	1.2
	1308	1.0		0641	0.2		0745	0.1		0813	0.0		0849	-0.1		0915	0.0
	1904	0.4		1411	1.1		1419	1.1		1506	1.1		1445	1.2		1406	1.1
				1949	0.4		2013	0.4		2058	0.4		2100	0.2		2123	0.3
07	0009	1.0	22	0206	0.9	07	0123	1.0	22	0147	1.0	07	0217	1.2	22	0221	1.3
	0721	0.2		0738	0.1		0826	0.0		0858	-0.1		0930	-0.1		0956	0.0
	1332	1.0		1500	1.1		1441	1.2		1447	1.1		1506	1.2		1434	1.1
	1949	0.4		2036	0.4		2054	0.3		2128	0.4		2138	0.2		2149	0.2
08	0051	1.0	23	0219	0.9	08	0200	1.1	23	0208	1.1	08	0247	1.3	23	0256	1.3
	0802	0.1		0826	0.0		0908	0.0		0943	-0.1		1008	-0.1		1032	0.1
	1406	1.1		1539	1.1		1506	1.2		1439	1.1		1521	1.1		1506	1.1
	2030	0.3		2115	0.4		2130	0.3		2156	0.3		2209	0.2		2217	0.3
09	0126	1.0	24	0151	0.9	09	0234	1.1	24	0243	1.2	09	0311	1.3	24	0328	1.2
	0847	0.0		0913	-0.1		0953	-0.1		1021	0.0		1051	0.0		1104	0.2
	1434	1.1		1558	1.1		1530	1.2		1504	1.1		1541	1.1		1539	1.1
	2109	0.4		2156	0.4		2204	0.3		2221	0.3		2249	0.2		2249	0.3
10	0204	1.1	25	0215	1.0	10	0306	1.2	25	0313	1.2	10	0343	1.2	25	0402	1.1
	0926	0.0		1000	-0.1		1036	0.0		1100	0.1		1134	0.1		1141	0.4
	1509	1.1		1515	1.1		1554	1.1		1534	1.1		1602	1.0		1608	1.0
	2153	0.4		2228	0.4		2241	0.3		2243	0.4		2328	0.3		2328	0.3
11	0241	1.1	26	0254	1.1	11	0339	1.2	26	0354	1.2	11	0409	1.2	26	0436	1.0
	1008	0.0		1047	0.0		1113	0.0		1141	0.2		1213	0.3		1213	0.5
	1541	1.1		1528	1.0		1619	1.1		1606	1.0		1623	0.9		1636	0.9
	2230	0.4		2256	0.5		2315	0.3		2311	0.4						
12	0317	1.1	27	0330	1.1	12	0408	1.2	27	0426	1.1	12	0015	0.4	27	0017	0.4
	1054	0.0		1128	0.1		1158	0.1		1213	0.3		0449	1.0		0506	0.9
	1619	1.1		1602	1.0		1645	1.0		1643	1.0		1304	0.5		1300	0.6
	2306	0.4		2323	0.5		2356	0.4		2351	0.4		1651	0.8		1654	0.9
													2021	0.6			
													2136	0.6			
13	0354	1.0	28	0408	1.1	13	0439	1.1	28	0502	1.0	13	0113	0.4	28	0119	0.4
	1138	0.1		1209	0.2		1245	0.2		1256	0.4		0523	0.9		0549	0.8
	1653	1.0		1638	1.0		1708	0.9		1711	0.9		0815	0.7		0815	0.7
	2349	0.4		2349	0.5							1032	0.8		1056	0.8
													1409	0.6		1400	0.6
													1704	0.8		1706	0.8
													2024	0.5			
													2300	0.6			

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14 0426  1.0   29 0453  1.1    14 0045  0.4   29 0045  0.4    14 0230  0.4   29 0236  0.4
   1223  0.1      1256  0.3       0509  1.0      0538  0.9       0615  0.8      1141  0.9
   1728  1.0      1711  0.9       1334  0.3      1343  0.5       0815  0.7      1509  0.7
                                  1738  0.8      1745  0.8       1147  0.9      1721  0.7
                                  2019  0.7                      1600  0.7      2051  0.6
                                  2132  0.7                      1702  0.7      2258  0.7
                                                                 2047  0.5
                                                                 2356  0.7

15 0030  0.5   30 0024  0.5    15 0139  0.4   30 0153  0.5    15 0356  0.4   30 0354  0.4
   0504  1.0      0534  1.0       0554  0.9      0619  0.8       1234  1.0      1209  1.0
   1309  0.2      1343  0.4       1436  0.5      0906  0.7       2045  0.5      1651  0.6
   1811  0.9      1756  0.9       1804  0.7      1121  0.7                      2338  0.8
                                  2034  0.6      1441  0.6
               31 0117  0.5       2300  0.7      1811  0.8
                  0621  0.9                   31 0304  0.5
                  1432  0.5                      1206  0.8
                  1845  0.8                      1553  0.6
                                                 1908  0.7
                                                 2200  0.7
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2021                        UBATUBA - BASE NORTE DO IOUSP                       2021

           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 0504  0.3 16 0036  0.9    01 0009  1.0 16 0008  1.0    01 0024  1.1 16 0026  1.0
   1243  1.1    0600  0.2       0621  0.1    0704  0.2       0639  0.1    0717  0.3
   1813  0.5    1313  1.0       1306  1.1    1208  1.0       1321  1.0    1206  1.0
                1904  0.4       1839  0.3    1923  0.3       1849  0.2    1932  0.2
02 0006  0.9 17 0043  0.9    02 0041  1.1 17 0034  1.1    02 0100  1.1 17 0106  1.0
   0604  0.2    0651  0.1       0708  0.0    0747  0.2       0728  0.1    0758  0.3
   1308  1.1    1334  1.0       1338  1.1    1232  1.0       1347  1.0    1249  1.0
   1843  0.4    1930  0.4       1917  0.2    1956  0.2       1936  0.1    2009  0.1
03 0036  1.0 18 0039  1.0    03 0108  1.2 18 0108  1.1    03 0132  1.2 18 0139  1.1
   0656  0.1    0734  0.1       0754  0.0    0823  0.2       0817  0.2    0839  0.3
   1338  1.2    1311  1.0       1354  1.1    1306  1.1       1343  1.0    1324  1.1
   1917  0.3    1956  0.3       1958  0.1    2032  0.2       2023  0.1    2051  0.1
04 0102  1.1 19 0058  1.1    04 0130  1.2 19 0145  1.2    04 0154  1.2 19 0217  1.1
   0741  0.0    0811  0.1       0839  0.0    0900  0.2       0906  0.2    0915  0.3
   1400  1.2    1308  1.1       1406  1.1    1345  1.1       1343  0.9    1402  1.1
   1954  0.2    2024  0.2       2041  0.1    2106  0.1       2111  0.0    2130  0.1
05 0128  1.2 20 0126  1.2    05 0156  1.2 20 0219  1.2    05 0223  1.1 20 0256  1.1
   0821 -0.1    0853  0.1       0921  0.1    0938  0.3       0958  0.3    0954  0.4
   1421  1.2    1334  1.1       1409  1.0    1415  1.1       1404  0.9    1439  1.1
   2030  0.2    2053  0.2       2124  0.1    2145  0.1       2202  0.0    2208  0.1
06 0154  1.3 21 0200  1.2    06 0223  1.2 21 0258  1.1    06 0300  1.1 21 0332  1.1
   0902 -0.1    0928  0.1       1006  0.2    1009  0.4       1049  0.5    1034  0.4
   1432  1.2    1406  1.1       1426  1.0    1453  1.1       1438  0.9    1511  1.0
   2106  0.1    2124  0.2       2209  0.1    2221  0.1       2254  0.0    2253  0.1
07 0219  1.3 22 0236  1.2    07 0300  1.2 22 0334  1.1    07 0336  1.0 22 0411  1.0
   0947  0.0    1002  0.2       1056  0.4    1049  0.4       0641  0.9    1109  0.5
   1443  1.1    1441  1.1       1454  0.9    1519  1.0       1136  0.6    1547  1.0
   2145  0.1    2158  0.2       2300  0.1    2302  0.2       1508  0.9    2338  0.2
                                                            2349  0.1
08 0247  1.3 23 0308  1.2    08 0338  1.1 23 0411  1.0    08 0415  0.9 23 0451  1.0
   1026  0.1    1038  0.3       1147  0.5    1128  0.5       0609  0.9    1154  0.5
   1502  1.0    1509  1.1       1517  0.9    1549  1.0       0808  0.9    1619  0.9
   2224  0.2    2236  0.2       2356  0.2    2349  0.2       1221  0.6
                                                            1554  0.9
09 0313  1.2 24 0345  1.1    09 0415  0.9 24 0453  0.9    09 0045  0.2 24 0023  0.2
   1108  0.2    1108  0.4       0647  0.8    1209  0.6       0502  0.8    0536  0.9
   1521  1.0    1541  1.0       0853  0.9    1609  0.9       0700  0.8    1239  0.5
   2308  0.2    2313  0.3       1245  0.7                    0924  0.9    1658  0.9
                                1553  0.9                   1308  0.7
                                                            1641  0.9
10 0351  1.1 25 0417  1.0    10 0058  0.2 25 0043  0.3    10 0143  0.2 25 0111  0.2
   1156  0.4    1149  0.5       0506  0.8    0543  0.9       0554  0.8    0823  0.9
   1549  0.9    1602  1.0       0700  0.7    0704  0.8       0749  0.7    1326  0.5
                                1006  0.9    0832  0.8       1026  0.8    1745  0.9
                                1351  0.7    1304  0.6       1400  0.7
                                1615  0.8    1639  0.8       1745  0.8
                                2019  0.6
                                2158  0.6
11 0000  0.3 26 0000  0.3    11 0202  0.3 26 0143  0.3    11 0245  0.3 26 0208  0.3
   0424  1.0    0454  0.9       0608  0.7    0953  0.9       0656  0.7    0949  0.9
   0854  0.8    1234  0.6       0723  0.7    1404  0.6       0834  0.7    1421  0.5
   1253  0.6    1617  0.9       1104  0.9    1721  0.8       1111  0.8    1906  0.8
   1606  0.8                    1524  0.7                    1502  0.6
   2008  0.5                    1653  0.7                    1917  0.8
   2113  0.5                    2041  0.6
                                2254  0.7
12 0104  0.3 27 0058  0.4    12 0313  0.3 27 0249  0.3    12 0349  0.3 27 0306  0.3
   0508  0.8    0536  0.8       1151  0.9    1043  0.9       0809  0.7    1051  0.9
   0736  0.7    0738  0.8       1715  0.7    1506  0.6       0909  0.7    1519  0.5
   1034  0.9    1002  0.8       2336  0.8    2156  0.8       1153  0.8    2211  0.9
   1402  0.7    1332  0.7                                    1617  0.6
   1626  0.8    1638  0.8                                    2121  0.8
   2011  0.5
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   2243  0.6
13 0217  0.4   28 0204  0.4   13 0424  0.3   28 0353  0.3   13 0451  0.4   28 0408  0.3
   0606  0.7      1054  0.9      1217  0.9      1124  1.0      1202  0.8      1145  0.9
   0749  0.7      1443  0.7      1751  0.6      1609  0.5      1721  0.5      1621  0.4
   1132  1.0      1702  0.7      2358  0.8      2256  0.9      2324  0.9      2334  0.9
   2030  0.5      2015  0.7
   2332  0.7
14 0343  0.3   29 0315  0.4   14 0526  0.3   29 0453  0.2   14 0547  0.3   29 0509  0.3
   1213  1.0      1130  1.0      1245  0.9      1204  1.0      1038  0.8      1232  0.9
   2006  0.6      1600  0.6      1819  0.5      1706  0.4      1808  0.4      1723  0.3
                  1854  0.6      2354  0.9      2343  1.0      2345  0.9
                  2256  0.8
15 0006  0.8   30 0428  0.3   15 0619  0.2   30 0549  0.2   15 0636  0.3   30 0038  1.0
   0458  0.3      1202  1.0      1236  0.9      1247  1.1      1124  0.9      0613  0.3
   1253  1.0      1709  0.5      1851  0.4      1758  0.3      1853  0.3      1313  0.9
   1851  0.5      2336  0.9                                                  1823  0.2
               31 0530  0.2                                              31 0136  1.1
                  1238  1.1                                                 0713  0.3
                  1758  0.4                                                 1354  0.9
                                                                           1919  0.1
```

2021   PORTO DE SANTOS - TORRE GRANDE   2021

               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

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     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 0454  1.4  16 0424  1.3   01 0545  1.3  16 0453  1.3   01 0438  1.4  16 0347  1.4
   1034  0.4     1013  0.5      1121  0.4     1036  0.4      1023  0.2     0951  0.3
   1528  1.3     1641  1.2      1636  1.3     1706  1.2      1553  1.4     1619  1.4
   2234  0.1     2347  0.0                                   2249  0.1     2321  0.2
02 0536  1.3  17 0456  1.3   02 0002  0.2  17 0045  0.3   02 0458  1.3  17 0411  1.4
   1109  0.5     1038  0.5      0613  1.2     0521  1.3      1056  0.3     1009  0.3
   1604  1.2     1702  1.1      1158  0.5     1053  0.4      1617  1.4     1649  1.3
   2330  0.2                    1709  1.2     1736  1.1      2332  0.3
03 0617  1.2  18 0034  0.1   03 0054  0.3  18 0132  0.4   03 0517  1.1  18 0004  0.3
   1151  0.5     0526  1.2      0653  1.0     0558  1.2      1134  0.4     0445  1.3
   1643  1.1     1058  0.5      1245  0.5     1123  0.5      1651  1.3     1024  0.4
                 1734  1.1      1753  1.1     1808  1.0                    1713  1.2
04 0026  0.2  19 0117  0.2   04 0153  0.5  19 0223  0.5   04 0015  0.5  19 0056  0.5
   0706  1.1     0602  1.2      0743  0.9     0636  1.0      0536  1.0     0511  1.2
   1234  0.6     1123  0.6      1351  0.6     1247  0.6      1219  0.4     1043  0.5
   1726  1.0     1817  1.0      1906  0.9     1904  0.9      1719  1.1     1747  1.1
                                              2043  0.9
                                              2330  0.9
05 0121  0.3  20 0204  0.3   05 0302  0.6  20 0323  0.6   05 0106  0.7  20 0153  0.6
   0804  1.1     0643  1.1      1130  0.8     0726  0.9      0515  0.8     0551  1.1
   1324  0.6     1206  0.6      1511  0.6     1500  0.6      1328  0.5     1238  0.5
   2026  1.0     2111  0.9                                   1800  1.0     1819  0.9
                                                            2108  0.8     2108  0.8
                                                            2356  0.9     2336  0.9
06 0219  0.4  21 0258  0.4   06 0028  1.0  21 0015  1.0   06 0343  0.8  21 0300  0.7
   0913  1.0     0730  1.0      0732  0.6     0441  0.6      0841  0.6     0630  0.9
   1441  0.6     1409  0.6      1247  0.9     0913  0.8      1149  0.7     1417  0.6
   2156  1.0     2309  1.0      1647  0.5     1156  0.8      1456  0.5
                                              1624  0.6      1904  0.8
                                                            2054  0.8
07 0326  0.4  22 0356  0.5   07 0136  1.1  22 0058  1.2   07 0100  1.1  22 0009  1.0
   1041  1.0     0838  1.0      0815  0.5     0608  0.5      0804  0.6     0434  0.7
   1606  0.6     1617  0.6      1326  1.0     1243  1.0      1234  0.9     1143  0.8
   2309  1.1                    1756  0.3     1736  0.4      1617  0.5     1543  0.5
08 0449  0.5  23 0006  1.1   08 0217  1.2  23 0138  1.3   08 0143  1.2  23 0049  1.2
   1226  1.0     0500  0.5      0854  0.5     0709  0.4      0817  0.5     0624  0.6
   1723  0.5     1028  0.9      1400  1.1     1315  1.1      1304  1.0     1215  0.9
                 1736  0.5      1849  0.2     1826  0.3      1732  0.3     1658  0.4
09 0038  1.1  24 0056  1.2   09 0256  1.3  24 0209  1.4   09 0209  1.3  24 0117  1.3
   0721  0.5     0608  0.5      0917  0.5     0749  0.4      0841  0.5     0706  0.4
   1324  1.1     1236  1.0      1432  1.2     1343  1.2      1336  1.2     1247  1.1
   1815  0.3     1819  0.4      1932  0.0     1911  0.1      1826  0.2     1808  0.3
10 0156  1.2  25 0139  1.3   10 0321  1.4  25 0247  1.5   10 0238  1.3  25 0153  1.5
   0819  0.5     0708  0.4      0926  0.5     0823  0.3      0853  0.4     0738  0.3
   1406  1.1     1317  1.1      1458  1.3     1413  1.3      1400  1.3     1319  1.2
   1902  0.2     1849  0.3      2015 -0.1     1953  0.0      1911  0.0     1854  0.1
11 0253  1.3  26 0217  1.4   11 0334  1.4  26 0317  1.6   11 0249  1.3  26 0221  1.5
   0843  0.5     0754  0.4      0853  0.5     0853  0.2      0838  0.4     0804  0.2
   1445  1.2     1343  1.2      1519  1.3     1432  1.4      1424  1.4     1345  1.4
   1949  0.1     1923  0.2      2100 -0.1     2036 -0.1      1956 -0.1     1938  0.0
12 0336  1.3  27 0258  1.5   12 0326  1.4  27 0349  1.6   12 0245  1.4  27 0251  1.6
   0845  0.5     0834  0.3      0908  0.4     0923  0.2      0824  0.4     0828  0.2
   1517  1.2     1411  1.2      1539  1.4     1458  1.4      1447  1.4     1415  1.5
   2034  0.0     2004  0.1      2145 -0.1     2119 -0.1      2036 -0.1     2021 -0.1
13 0358  1.3  28 0338  1.5   13 0336  1.4  28 0413  1.5   13 0245  1.4  28 0317  1.5
   0908  0.5     0909  0.3      0930  0.4     0953  0.2      0843  0.3     0856  0.1
   1539  1.2     1432  1.3      1558  1.4     1523  1.5      1508  1.5     1438  1.5
   2119 -0.1     2047  0.0      2226 -0.1     2204  0.0      2115 -0.1     2104 -0.1
14 0356  1.3  29 0409  1.5   14 0356  1.4              14 0300  1.4  29 0338  1.4
   0924  0.5     0943  0.3      0954  0.4                    0904  0.3     0924  0.1
   1600  1.2     1502  1.3      1617  1.3                    1532  1.5     1506  1.5
   2208 -0.1     2132  0.0      2311  0.0                    2158  0.0     2143  0.0
15 0404  1.3  30 0443  1.5   15 0421  1.4              15 0319  1.4  30 0356  1.3
```

0954	0.5		1015	0.3		1015	0.4		0928	0.3
1617	1.2		1530	1.3		1643	1.3		1556	1.5
2258	0.0		2221	0.0		2358	0.1		2241	0.1

0958	0.2			
1534	1.5			
2223	0.2			

31	0513	1.4	
	1049	0.3	
	1602	1.3	
	2311	0.1	

31	0409	1.2	
	1036	0.2	
	1602	1.4	
	2300	0.4	

2021   PORTO DE SANTOS - TORRE GRANDE   2021

        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 0423  1.0  16 0406  1.3  01 0313  0.9  16 0408  1.2  01 0228  1.0  16 0038  0.6
   1121  0.3     1009  0.3     1221  0.3     1121  0.4     0651  0.7     0458  1.0
   1634  1.3     1706  1.2     1706  1.1     1758  1.1     0953  0.9     1317  0.3
   2338  0.6                   2156  0.9                   1402  0.2     2002  1.1
                               2300  0.9                   1854  1.0
                                                           2208  0.8
02 0419  0.9  17 0015  0.5  02 0215  1.0  17 0028  0.6  02 0245  1.0  17 0136  0.7
   1217  0.4     0439  1.2     0738  0.6     0439  1.1     0641  0.7     0849  0.9
   1706  1.1     1049  0.4     0954  0.7     1236  0.4     1032  1.0     1411  0.3
   2100  0.8     1745  1.1     1324  0.3     1904  1.0     1456  0.2     2121  1.1
   2204  0.8                   1758  0.9                   1953  0.9
                               2036  0.8                   2249  0.8
03 0004  0.8  18 0109  0.7  03 0204  1.0  18 0128  0.7  03 0143  0.9  18 0300  0.7
   0311  0.9     0506  1.0     0715  0.6     0502  0.9     0647  0.7     1002  1.0
   0824  0.6     1241  0.5     1041  0.8     1341  0.4     1102  1.1     1509  0.3
   1023  0.6     1836  1.0     1426  0.3     2141  1.0     1547  0.3     2249  1.1
   1328  0.4     2253  0.9     1904  0.8                   2104  0.9
   1749  1.0                   2054  0.8
   2047  0.8
04 0039  1.0  19 0221  0.7  04 0119  1.1  19 0302  0.8  04 0049  0.9  19 0526  0.6
   0758  0.6     0539  0.9     0709  0.6     0458  0.8     0653  0.6     1051  1.1
   1117  0.8     1358  0.5     1113  1.0     0609  0.8     1136  1.1     1613  0.4
   1447  0.5     2343  1.0     1526  0.3     0954  0.9     1638  0.3
   1853  0.8                                 1441  0.4     2241  1.0
   2047  0.8                                 2317  1.1
05 0106  1.1  20 0530  0.7  05 0117  1.1  20 0606  0.6  05 0649  0.5  20 0008  1.1
   0745  0.5     1051  0.8     0717  0.6     1045  1.0     1208  1.2     0553  0.5
   1158  0.9     1504  0.5     1147  1.1     1545  0.3     1732  0.3     1136  1.2
   1558  0.4                   1623  0.3                                 1728  0.4
06 0132  1.2  21 0015  1.2  06 0121  1.1  21 0006  1.2  06 0002  1.1  21 0102  1.2
   0754  0.5     0628  0.6     0728  0.5     0626  0.5     0649  0.4     0626  0.3
   1230  1.1     1134  1.0     1211  1.2     1126  1.1     1245  1.3     1226  1.3
   1702  0.3     1615  0.4     1717  0.2     1653  0.3     1826  0.3     1847  0.4
07 0153  1.2  22 0051  1.3  07 0113  1.1  22 0045  1.3  07 0041  1.2  22 0147  1.2
   0804  0.5     0653  0.4     0728  0.4     0641  0.4     0706  0.3     0702  0.2
   1256  1.2     1208  1.1     1241  1.3     1204  1.3     1323  1.4     1332  1.3
   1758  0.2     1726  0.3     1809  0.2     1800  0.2     1919  0.3     2015  0.4
08 0200  1.2  23 0121  1.4  08 0058  1.2  23 0121  1.3  08 0115  1.2  23 0228  1.2
   0809  0.4     0715  0.3     0721  0.4     0702  0.3     0728  0.2     0741  0.1
   1321  1.3     1239  1.3     1309  1.4     1239  1.4     1402  1.4     1456  1.3
   1847  0.1     1828  0.1     1900  0.1     1900  0.2     2006  0.3     2043  0.4
09 0158  1.3  24 0153  1.5  09 0113  1.3  24 0153  1.3  09 0143  1.3  24 0302  1.2
   0753  0.4     0736  0.2     0728  0.3     0726  0.2     0754  0.2     0824  0.0
   1347  1.4     1315  1.4     1343  1.4     1321  1.4     1445  1.4     1558  1.3
   1928  0.0     1921  0.0     1945  0.1     1947  0.2     2051  0.3     2123  0.5
10 0154  1.3  25 0219  1.5  10 0136  1.3  25 0223  1.3  10 0208  1.3  25 0328  1.1
   0756  0.3     0758  0.2     0751  0.2     0800  0.1     0821  0.1     0911  0.0
   1411  1.5     1343  1.5     1413  1.5     1404  1.4     1523  1.4     1639  1.3
   2008  0.0     2006  0.0     2026  0.1     2032  0.2     2130  0.3     2143  0.6
11 0206  1.4  26 0243  1.4  11 0158  1.4  26 0245  1.2  11 0232  1.3  26 0349  1.1
   0813  0.2     0826  0.1     0815  0.2     0839  0.1     0851  0.1     1004  0.0
   1439  1.5     1415  1.5     1451  1.5     1439  1.4     1602  1.4     1645  1.3
   2051  0.0     2045  0.0     2106  0.2     2113  0.3     2206  0.3     2206  0.6
12 0224  1.4  27 0304  1.3  12 0221  1.4  27 0308  1.1  12 0258  1.3  27 0404  1.0
   0839  0.2     0900  0.1     0839  0.2     0923  0.1     0926  0.2     1058  0.0
   1506  1.5     1447  1.5     1523  1.4     1523  1.3     1641  1.4     1654  1.2
   2130  0.1     2123  0.2     2147  0.2     2151  0.5     2243  0.4     2226  0.7
13 0251  1.4  28 0319  1.2  13 0249  1.4  28 0321  1.0  13 0323  1.3  28 0411  1.0
   0904  0.2     0938  0.1     0906  0.2     1015  0.1     1015  0.2     1154  0.1
   1536  1.5     1517  1.4     1558  1.4     1604  1.3     1721  1.3     1715  1.2
   2209  0.2     2202  0.3     2226  0.3     2217  0.6     2315  0.5     2249  0.7
14 0311  1.4  29 0338  1.1  14 0311  1.4  29 0334  1.0  14 0356  1.2  29 0411  1.0
   0926  0.2     1023  0.2     0932  0.2     1113  0.1     1117  0.3     1245  0.1
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	1604	1.4		1554	1.3		1634	1.3		1641	1.2
	2251	0.3		2236	0.5		2302	0.4		2247	0.8
15	0341	1.4	30	0347	1.0	15	0343	1.3	30	0249	0.9
	0945	0.3		1117	0.2		1013	0.3		1211	0.2
	1636	1.3		1626	1.2		1711	1.2		1719	1.1
	2334	0.4		2302	0.7		2343	0.5		2258	0.8

	1806	1.2
	2354	0.6
15	0423	1.1
	1219	0.3
	1858	1.2

	1749	1.2
	2258	0.7
30	0334	1.0
	1332	0.2
	1819	1.1
	2311	0.7

31	0209	1.0
	0708	0.7
	0856	0.8
	1308	0.2
	1804	1.0
	2224	0.9

2021   PORTO DE SANTOS - TORRE GRANDE   2021

              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

DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT	DIA	HORA	ALT
01	0354	0.9	16	0045	0.6	01	1115	0.9	16	0224	0.6	01	0017	0.8	16	0053	1.0
	0636	0.9		0543	1.0		1526	0.5		1158	1.0		0454	0.6		0517	0.3
	0928	0.9		1349	0.3		1941	1.0		1554	0.7		1251	1.2		1354	1.3
	1417	0.3		2000	1.0					1656	0.7		1739	0.6		2026	0.4
	1900	1.1								1932	0.7						
	2332	0.7															
02	0408	0.8	17	0145	0.6	02	0402	0.6	17	0030	0.8	02	0047	0.9	17	0123	1.2
	0613	0.8		0900	1.0		1204	1.0		0409	0.5		0628	0.4		0613	0.2
	1024	1.0		1447	0.4		1628	0.6		1306	1.1		1321	1.3		1417	1.3
	1504	0.3		2113	0.9		2056	0.9		2009	0.6		1854	0.5		2049	0.4
	1949	1.0															
03	0238	0.7	18	0308	0.6	03	0606	0.5	18	0111	1.0	03	0109	1.1	18	0151	1.3
	0611	0.7		1030	1.0		1251	1.1		0538	0.4		0639	0.3		0656	0.0
	1109	1.0		1554	0.5		1745	0.5		1400	1.2		1356	1.4		1441	1.3
	1558	0.4								2047	0.5		1939	0.4		2056	0.4
	2051	1.0															
04	0613	0.6	19	0008	0.9	04	0054	1.0	19	0151	1.1	04	0139	1.2	19	0213	1.4
	1154	1.1		0453	0.5		0632	0.4		0632	0.2		0708	0.2		0736	-0.1
	1658	0.4		1211	1.1		1328	1.3		1441	1.3		1426	1.5		1443	1.3
	2234	1.0		1928	0.6		1854	0.5		2111	0.4		2011	0.3		2036	0.4
05	0624	0.5	20	0113	1.0	05	0126	1.1	20	0221	1.2	05	0202	1.3	20	0234	1.5
	1239	1.2		0600	0.4		0654	0.3		0715	0.0		0734	0.0		0813	-0.2
	1800	0.4		1339	1.2		1406	1.4		1508	1.4		1458	1.5		1438	1.4
				2030	0.5		1947	0.4		2138	0.4		2041	0.2		2036	0.3
06	0038	1.0	21	0158	1.1	06	0153	1.2	21	0249	1.3	06	0224	1.4	21	0254	1.5
	0645	0.3		0647	0.2		0721	0.2		0758	-0.1		0811	-0.1		0854	-0.1
	1321	1.3		1439	1.3		1445	1.4		1536	1.4		1526	1.6		1447	1.4
	1902	0.4		2109	0.5		2026	0.3		2132	0.4		2109	0.2		2056	0.3
07	0119	1.1	22	0238	1.2	07	0217	1.3	22	0309	1.4	07	0245	1.5	22	0311	1.5
	0711	0.2		0728	0.1		0751	0.1		0839	-0.2		0851	-0.1		0934	-0.1
	1404	1.3		1524	1.4		1519	1.5		1538	1.4		1551	1.5		1504	1.4
	1954	0.4		2145	0.5		2100	0.3		2111	0.4		2138	0.2		2117	0.2
08	0147	1.2	23	0308	1.2	08	0236	1.3	23	0324	1.4	08	0308	1.5	23	0336	1.5
	0736	0.2		0811	0.0		0824	0.0		0919	-0.2		0930	-0.1		1013	0.1
	1449	1.4		1600	1.4		1553	1.5		1532	1.4		1613	1.4		1528	1.4
	2039	0.3		2147	0.5		2134	0.2		2123	0.4		2206	0.2		2141	0.2
09	0211	1.3	24	0334	1.2	09	0256	1.4	24	0343	1.4	09	0332	1.5	24	0400	1.4
	0806	0.1		0858	-0.1		0906	0.0		1002	-0.1		1013	0.0		1058	0.2
	1526	1.4		1626	1.4		1623	1.5		1547	1.4		1636	1.3		1556	1.4
	2115	0.3		2134	0.5		2202	0.2		2145	0.4		2238	0.2		2200	0.3
10	0230	1.3	25	0353	1.2	10	0319	1.4	25	0400	1.4	10	0400	1.5	25	0424	1.3
	0838	0.1		0947	-0.1		0951	0.0		1049	0.0		1058	0.2		1145	0.4
	1604	1.5		1626	1.3		1651	1.4		1606	1.4		1658	1.2		1623	1.3
	2151	0.3		2151	0.5		2232	0.3		2204	0.3		2309	0.3		2215	0.3
11	0254	1.3	26	0406	1.2	11	0347	1.4	26	0417	1.4	11	0426	1.3	26	0456	1.2
	0917	0.1		1034	-0.1		1039	0.1		1134	0.1		1143	0.4		1238	0.5
	1641	1.4		1626	1.3		1717	1.4		1634	1.3		1715	1.0		1656	1.2
	2223	0.3		2206	0.5		2300	0.3		2221	0.3		2353	0.4		2224	0.4
12	0319	1.3	27	0419	1.2	12	0413	1.4	27	0443	1.3	12	0458	1.2	27	0524	1.1
	1006	0.1		1121	0.0		1128	0.2		1219	0.3		1234	0.6		1047	0.8
	1715	1.4		1647	1.3		1747	1.2		1702	1.3		1721	0.9		1332	0.6
	2254	0.4		2224	0.5		2334	0.4		2234	0.4					1724	1.1
																2239	0.5
13	0353	1.3	28	0439	1.2	13	0445	1.3	28	0506	1.2	13	0053	0.5	28	0600	0.9
	1102	0.1		1208	0.1		1219	0.3		1306	0.4		0528	1.0		0900	0.8
	1751	1.3		1711	1.3		1813	1.1		1734	1.2		0902	0.8		1128	0.9
	2324	0.4		2245	0.5					2247	0.4		1111	0.9		1438	0.7
													1356	0.8		1802	1.0
													1600	0.8			
													2106	0.6			
													2313	0.7			
14	0421	1.2	29	0458	1.1	14	0009	0.4	29	0536	1.0	14	0211	0.5	29	0202	0.6
	1158	0.2		1258	0.2		0513	1.2		1041	0.8		0615	0.8		1200	1.0

```
         1826  1.2         1743  1.2         1311  0.5         1400  0.5         0839  0.8         1558  0.7
                           2258  0.5         1849  1.0         1806  1.1         1239  1.0         1904  0.8
                                                               2306  0.5         2004  0.6         2156  0.8
                                                                                                   2341  0.8
15 0000  0.5   30 0521  1.1      15 0100  0.5   30 0608  0.9      15 0011  0.8   30 0339  0.6
   0458  1.1      1347  0.3         0556  1.0      0900  0.8         0354  0.5      1232  1.2
   1254  0.3      1813  1.2         1413  0.6      1139  0.9         1317  1.2      1751  0.6
   1908  1.1      2317  0.5         1928  0.8      1500  0.6         2006  0.5
                                                   1851  1.0
                                                   2313  0.7
               31 0554  0.9                      31 0015  0.7
                  1434  0.4                         0243  0.6
                  1854  1.1                         1213  1.0
                  2344  0.6                         1609  0.6
                                                    1954  0.8
                                                    2241  0.8
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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

        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 0006  0.9  16 0045  1.2   01 0024  1.2  16 0058  1.4   01 0023  1.3  16 0111  1.3
   0523  0.5     0543  0.2      0613  0.2     0638  0.1      0628  0.2     0658  0.3
   1300  1.3     1351  1.2      1324  1.4     1249  1.2      1324  1.3     1256  1.2
   1849  0.5     2006  0.4      1917  0.3     1917  0.3      1906  0.2     1915  0.3
02 0038  1.1  17 0109  1.3   02 0054  1.4  17 0126  1.4   02 0108  1.4  17 0153  1.4
   0621  0.3     0626  0.1      0653  0.1     0719  0.1      0719  0.2     0745  0.3
   1330  1.4     1351  1.2      1353  1.4     1313  1.3      1354  1.3     1330  1.2
   1923  0.4     2008  0.4      1939  0.2     1936  0.2      1939  0.1     1945  0.2
03 0106  1.2  18 0134  1.4   03 0128  1.5  18 0200  1.4   03 0145  1.4  18 0230  1.4
   0639  0.2     0708  0.0      0732  0.0     0802  0.1      0806  0.2     0826  0.3
   1400  1.5     1339  1.3      1419  1.4     1341  1.3      1426  1.2     1400  1.3
   1949  0.3     1953  0.3      2008  0.1     2004  0.2      2019  0.1     2017  0.2
04 0134  1.4  19 0158  1.5   04 0200  1.5  19 0232  1.5   04 0232  1.4  19 0306  1.4
   0719  0.0     0749  0.0      0815  0.0     0845  0.2      0845  0.3     0906  0.3
   1428  1.5     1349  1.3      1439  1.4     1406  1.3      1454  1.1     1424  1.3
   2015  0.2     2004  0.3      2041  0.1     2034  0.2      2104  0.0     2051  0.2
05 0158  1.5  20 0221  1.5   05 0230  1.5  20 0304  1.4   05 0321  1.4  20 0345  1.4
   0754 -0.1     0826  0.0      0856  0.1     0923  0.2      0923  0.4     0947  0.3
   1453  1.5     1408  1.4      1502  1.3     1434  1.3      1517  1.1     1451  1.3
   2039  0.1     2026  0.2      2119  0.1     2106  0.2      2156  0.0     2126  0.2
06 0223  1.6  21 0251  1.5   06 0304  1.5  21 0341  1.4   06 0404  1.3  21 0419  1.4
   0832 -0.1     0904  0.1      0932  0.3     1002  0.3      1000  0.6     1024  0.4
   1513  1.5     1432  1.4      1519  1.1     1500  1.3      1539  1.0     1517  1.3
   2109  0.1     2054  0.2      2204  0.1     2136  0.2      2251  0.1     2209  0.2
07 0249  1.6  22 0315  1.5   07 0336  1.4  22 0413  1.3   07 0436  1.2  22 0458  1.3
   0911  0.0     0947  0.2      1008  0.5     1045  0.4      1024  0.7     1100  0.4
   1532  1.4     1458  1.4      1539  1.0     1528  1.3      1547  0.9     1551  1.2
   2141  0.1     2121  0.2      2256  0.2     2217  0.3      2349  0.1     2300  0.2
08 0313  1.5  23 0347  1.4   08 0409  1.2  23 0454  1.3   08 0515  1.1  23 0538  1.3
   0953  0.1     1026  0.3      1043  0.7     1128  0.5      1053  0.8     1139  0.5
   1554  1.2     1523  1.4      1536  0.9     1600  1.2      1356  0.9     1619  1.2
   2217  0.1     2143  0.3      2354  0.2     2311  0.3      1854  0.8     2354  0.3
                                                            2009  0.8
09 0345  1.5  24 0415  1.4   09 0454  1.1  24 0538  1.2   09 0045  0.2  24 0623  1.2
   1028  0.3     1109  0.4      1100  0.8     1213  0.6      0556  1.0     1219  0.6
   1609  1.1     1554  1.3      1402  0.9     1628  1.1      1056  0.9     1700  1.1
   2300  0.2     2209  0.3      1915  0.7                    1408  1.0
                                2104  0.7                    1830  0.8
                                                            2115  0.9
10 0411  1.3  25 0451  1.2   10 0058  0.3  25 0013  0.4   10 0139  0.2  25 0051  0.3
   1104  0.6     1158  0.5      0541  0.9     0634  1.1      0643  1.0     0721  1.1
   1619  1.0     1619  1.2      0806  0.9     1306  0.7      1017  0.8     1308  0.6
   2353  0.3     2238  0.4      1353  1.0     1704  1.0      1438  1.0     1806  1.0
                                1902  0.6                    1821  0.8
                                2206  0.8                    2204  0.9
11 0449  1.2  26 0524  1.1   11 0200  0.3  26 0115  0.4   11 0230  0.3  26 0145  0.3
   1139  0.8     1256  0.6      0702  0.8     0826  1.0      0738  0.9     0838  1.1
   1530  0.9     1654  1.1      0804  0.8     1413  0.7      1041  0.8     1409  0.6
                                1324  1.0     1930  0.8      1449  0.9     2102  1.0
                                1856  0.6                    1834  0.7
                                2254  0.9                    2247  1.0
12 0058  0.4  27 0021  0.5   12 0304  0.3  27 0213  0.4   12 0323  0.3  27 0243  0.4
   0523  1.0     0611  1.0      1304  1.1     1038  1.1      0843  0.9     1002  1.0
   0821  0.8     0915  0.9      1904  0.6     1602  0.7      1251  0.9     1526  0.6
   1406  1.0     1047  0.9      2330  1.1     2209  1.0      1845  0.7     2213  1.1
   1956  0.6     1400  0.7                                   2323  1.1
   2254  0.7     1724  0.9
13 0209  0.4  28 0143  0.5   13 0404  0.3  28 0315  0.4   13 0417  0.3  28 0349  0.4
   0621  0.8     1121  1.0      1306  1.1     1130  1.2      0958  0.9     1119  1.1
   0809  0.8     1523  0.7      1917  0.5     1743  0.6      1841  0.6     1647  0.5
   1251  1.1     1824  0.8                    2300  1.1      2358  1.2     2311  1.1
   1932  0.6     2058  0.8
   2339  0.9
```

14	0332	0.4	29	0254	0.5	14	0000	1.2	29	0421	0.3	14	0511	0.3	29	0502	0.4
	1311	1.2		1156	1.1		0502	0.2		1211	1.2		1115	1.0		1224	1.1
	1941	0.5		1751	0.6		1300	1.1		1813	0.5		1830	0.5		1747	0.4
				2311	0.9		1926	0.5		2341	1.2						
15	0011	1.0	30	0404	0.4	15	0030	1.3	30	0528	0.3	15	0036	1.3	30	0013	1.2
	0447	0.3		1224	1.3		0553	0.2		1247	1.3		0606	0.3		0624	0.4
	1336	1.2		1830	0.5		1234	1.1		1834	0.3		1213	1.1		1319	1.1
	1956	0.5		2349	1.1		1919	0.4					1847	0.4		1834	0.3
			31	0515	0.3										31	0128	1.3
				1256	1.4											0734	0.4
				1854	0.4											1408	1.2
																1919	0.1

2021   CANANEIA - BASE SUL DO IOUSP   2021

             LATITUDE 25 1.0 S   LONGITUDE 47 55.5 W   FUSO +   3 HORAS

IOUSP-BASE SUL   NIVEL MEDIO .80 M   CARTA 1703

JANEIRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0506	1.5	16	0506	1.4
	1006	0.4		0936	0.4
	1641	1.3		1323	1.0
	2232	0.2		1511	0.9
				1808	1.2
				2313	0.1
02	0549	1.4	17	0547	1.4
	1032	0.5		1009	0.4
	1721	1.2		1408	1.1
	2315	0.2		1626	1.0
				1856	1.1
				2354	0.2
03	0628	1.4	18	0621	1.3
	1102	0.5		1051	0.4
	1806	1.2		1453	1.1
				1732	0.9
				1949	1.0
04	0004	0.3	19	0039	0.3
	0713	1.3		0702	1.2
	1134	0.6		1126	0.4
	1904	1.1		1523	1.1
				1815	0.9
				2049	1.0
05	0104	0.4	20	0136	0.5
	0804	1.2		0753	1.1
	1209	0.6		1206	0.5
	2008	1.1		1558	1.0
				1854	0.8
				2154	1.0
06	0421	0.5	21	0256	0.5
	0904	1.2		0849	1.1
	1304	0.7		1258	0.6
	1551	0.8		1623	0.9
	1709	0.8		1908	0.7
	2117	1.1		2258	1.0
07	0549	0.4	22	0438	0.6
	1015	1.1		0954	1.1
	1800	0.7		1402	0.6
	2224	1.1		1643	0.8
				1919	0.6
				2356	1.1
08	0700	0.4	23	0556	0.5
	1136	1.1		1100	1.1
	1839	0.5		1921	0.5
	2328	1.2			
09	0804	0.4	24	0047	1.2
	1249	1.1		0653	0.5
	1911	0.4		1202	1.1
				1924	0.4
10	0028	1.3	25	0132	1.3
	0906	0.4		0739	0.4
	1345	1.2		1300	1.2
	1943	0.3		1941	0.3
11	0124	1.3	26	0211	1.4
	1004	0.4		0817	0.4
	1436	1.3		1349	1.3
	2015	0.2		2009	0.2
12	0217	1.4	27	0256	1.5

FEVEREIRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0606	1.5	16	0551	1.3
	1043	0.4		1034	0.2
	1747	1.3		1502	1.1
	2326	0.3		1638	1.0
				1851	1.1
				2347	0.3
02	0653	1.3	17	0624	1.2
	1108	0.4		1104	0.3
	1830	1.2		1524	1.1
	2347	0.4		1738	1.0
				1938	1.0
03	0743	1.2	18	0017	0.5
	1145	0.5		0708	1.1
	1926	1.1		1141	0.4
				1553	1.0
				1809	0.9
				2041	1.0
04	0004	0.6	19	0104	0.6
	0241	0.7		0802	1.0
	0456	0.6		1217	0.5
	0841	1.0		1608	0.9
	1221	0.6		1841	0.8
	2039	1.1		2158	1.0
05	0028	0.7	20	0511	0.7
	0256	0.8		0911	1.0
	0615	0.5		1306	0.6
	0956	0.9		1615	0.8
	1317	0.6		1856	0.7
	1609	0.8		2324	1.1
	1758	0.7			
	2158	1.1			
06	0102	0.9	21	0619	0.6
	0319	1.0		1026	1.0
	0721	0.5		1906	0.5
	1119	0.9			
	1838	0.6			
	2317	1.1			
07	0158	1.0	22	0034	1.2
	0343	1.0		0704	0.5
	0817	0.4		1141	1.1
	1241	1.0		1923	0.4
	1908	0.4			
08	0034	1.2	23	0119	1.3
	0906	0.4		0743	0.4
	1338	1.2		1241	1.2
	1939	0.2		1947	0.2
09	0128	1.3	24	0200	1.4
	0953	0.4		0813	0.3
	1423	1.3		1332	1.3
	2008	0.1		2013	0.1
10	0213	1.4	25	0236	1.5
	1030	0.5		0843	0.3
	1506	1.4		1417	1.4
	2039	0.0		2047	0.0
11	0254	1.4	26	0309	1.6
	0823	0.6		0906	0.3
	1549	1.4		1500	1.5
	2109	0.0		2119	0.0
12	0332	1.5	27	0349	1.7

MARCO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0502	1.6	16	0441	1.4
	0954	0.3		0941	0.2
	1653	1.5		1741	1.3
	2230	0.2		2238	0.2
02	0547	1.4	17	0509	1.3
	1013	0.3		1008	0.2
	1728	1.4		1809	1.2
	2241	0.3		2302	0.3
03	0630	1.2	18	0543	1.2
	1045	0.3		1041	0.2
	1806	1.3		1853	1.1
	2254	0.5		2324	0.5
04	0202	0.7	19	0621	1.1
	0358	0.7		1109	0.3
	0719	1.1		1549	0.9
	1115	0.4		1658	0.9
	1858	1.2		1945	1.0
	2308	0.6		2353	0.6
05	0217	0.9	20	0721	1.0
	0526	0.6		1151	0.4
	0823	0.9		1556	0.9
	1158	0.5		1741	0.8
	2004	1.0		2054	1.0
	2334	0.7			
06	0249	1.1	21	0013	0.8
	0638	0.5		0241	0.9
	0951	0.8		0545	0.7
	1258	0.6		0847	0.9
	1602	0.7		1236	0.6
	1739	0.7		1553	0.8
	2136	1.0		1800	0.7
	2358	0.9		2232	1.0
07	0311	1.2	22	0621	0.6
	0728	0.4		1004	0.9
	1119	0.9		1826	0.5
	1817	0.5			
	2323	1.0			
08	0339	1.2	23	0024	1.2
	0811	0.4		0656	0.5
	1232	1.0		1117	1.0
	1849	0.4		1854	0.4
09	0108	1.2	24	0104	1.3
	0853	0.4		0724	0.4
	1323	1.2		1217	1.2
	1915	0.2		1924	0.2
10	0130	1.3	25	0136	1.5
	0921	0.4		0754	0.3
	1404	1.3		1306	1.3
	1945	0.1		2000	0.1
11	0202	1.4	26	0208	1.6
	0932	0.5		0817	0.2
	1447	1.4		1353	1.4
	2013	0.0		2036	0.0
12	0236	1.5	27	0245	1.7

	1100	0.5		0851	0.4		0824	0.5		0923	0.3
	1519	1.3		1434	1.4		1624	1.4		1539	1.5
	2047	0.1		2045	0.1		2141	0.0		2151	0.0
13	0304	1.4	28	0334	1.5	13	0406	1.5	28	0424	1.6
	0808	0.7		0917	0.4		0856	0.4		0936	0.3
	0932	0.7		1513	1.4		1700	1.4		1615	1.5
	1156	0.6		2119	0.1		2211	0.0		2213	0.1
	1602	1.3									
	2123	0.1									
14	0351	1.5	29	0409	1.6	14	0443	1.5			
	0824	0.6		0939	0.4		0924	0.3			
	1115	0.8		1556	1.4		1739	1.3			
	1254	0.8		2158	0.0		2245	0.1			
	1649	1.3									
	2200	0.0									
15	0430	1.5	30	0451	1.6	15	0513	1.4			
	0900	0.5		0958	0.4		1000	0.2			
	1234	0.9		1634	1.4		1809	1.2			
	1400	0.9		2230	0.1		2313	0.2			
	1728	1.3									
	2236	0.1									
			31	0526	1.5						
				1017	0.4						
				1708	1.4						
				2302	0.1						

	0802	0.5		0839	0.2
	1523	1.5		1432	1.5
	2045	0.0		2108	0.0
13	0306	1.5	28	0321	1.7
	0811	0.3		0853	0.2
	1600	1.5		1511	1.5
	2113	0.0		2136	0.0
14	0341	1.5	29	0400	1.6
	0841	0.2		0906	0.2
	1636	1.5		1554	1.6
	2145	0.0		2151	0.2
15	0409	1.5	30	0443	1.5
	0908	0.2		0923	0.2
	1706	1.4		1634	1.5
	2209	0.1		2153	0.3
			31	0523	1.3
				0951	0.2
				1711	1.4
				2158	0.4

2021   CANANEIA - BASE SUL DO IOUSP   2021

              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

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

01 0106  0.7  16 0454  1.2  01 0102  1.1  16 0443  1.1  01 0217  1.3  16 0706  1.0
   0245  0.7     1013  0.2     0419  0.7     1043  0.3     0602  0.6     1339  0.4
   0609  1.1     1828  1.2     0700  0.9     1854  1.3     0908  0.9     2000  1.3
   1019  0.2     2254  0.5     1058  0.3     2304  0.6     1356  0.4
   1756  1.3                   1839  1.2                   1953  1.1
   2211  0.5                   2213  0.7                   2326  0.7
02 0126  1.0  17 0526  1.1  02 0147  1.3  17 0538  1.0  02 0300  1.2  17 0011  0.7
   0421  0.7     1051  0.3     0526  0.6     1134  0.4     0649  0.6     0258  0.8
   0706  0.9     1909  1.1     0811  0.8     1939  1.2     1011  1.0     0454  0.8
   1100  0.3     2313  0.6     1208  0.4     2336  0.7     1500  0.4     0836  1.0
   1847  1.2                   1926  1.1                   2045  1.1     1524  0.4
   2238  0.6                   2253  0.7                                 2058  1.3
03 0200  1.2  18 0315  0.9  03 0221  1.3  18 0234  0.9  03 0013  0.7  18 0530  0.7
   0539  0.6     0456  0.9     0619  0.5     0508  0.8     0338  1.1     0938  1.1
   0817  0.8     0634  0.9     0939  0.9     0753  0.9     0717  0.5     1641  0.4
   1151  0.5     1128  0.4     1419  0.5     1423  0.5     1106  1.1     2206  1.2
   1949  1.1     2006  1.1     2024  1.0     2036  1.2     1556  0.4
   2300  0.7     2343  0.8     2324  0.8                   2151  1.1
04 0234  1.3  19 0224  0.9  04 0258  1.3  19 0017  0.9  04 0136  0.8  19 0600  0.5
   0634  0.5     0541  0.8     0702  0.4     0156  0.9     0358  0.9     1026  1.2
   0951  0.8     0815  0.9     1049  1.0     0539  0.7     0743  0.5     1758  0.4
   1311  0.6     1223  0.6     1554  0.4     0915  0.9     1154  1.2     2328  1.2
   2102  1.0     1509  0.6     2143  1.0     1621  0.4     1649  0.4
   2326  0.9     1638  0.6                   2149  1.2     2306  1.1
                 2121  1.1
05 0302  1.3  20 0011  1.0  05 0008  0.9  20 0600  0.5  05 0747  0.5  20 0632  0.4
   0717  0.4     0151  1.0     0324  1.2     1015  1.1     1234  1.3     1113  1.3
   1109  0.9     0604  0.6     0739  0.4     1721  0.3     1741  0.3     1919  0.4
   1721  0.5     0949  0.9     1143  1.1     2309  1.3
   2353  1.0     1726  0.5     1654  0.4
                 2311  1.2     2309  1.1
06 0324  1.2  21 0632  0.5  06 0204  1.0  21 0626  0.4  06 0011  1.2  21 0039  1.3
   0758  0.4     1054  1.0     0802  0.5     1104  1.2     0647  0.5     0700  0.3
   1209  1.1     1808  0.3     1224  1.3     1817  0.2     1311  1.3     1204  1.4
   1800  0.4                   1741  0.3                   1830  0.3     2038  0.4
07 0113  1.1  22 0023  1.3  07 0017  1.2  22 0015  1.4  07 0100  1.3  22 0134  1.3
   0826  0.4     0658  0.3     0809  0.5     0654  0.3     0647  0.3     0728  0.2
   1258  1.3     1145  1.2     1306  1.4     1151  1.3     1356  1.4     1300  1.4
   1836  0.2     1854  0.2     1824  0.2     1915  0.2     1919  0.3     2145  0.4
08 0106  1.2  23 0102  1.5  08 0100  1.3  23 0106  1.5  08 0139  1.4  23 0219  1.3
   0847  0.5     0723  0.3     0709  0.4     0717  0.2     0709  0.2     0756  0.2
   1341  1.4     1228  1.3     1349  1.4     1236  1.4     1438  1.4     1358  1.4
   1908  0.1     1938  0.1     1906  0.2     2017  0.2     2002  0.3     2247  0.4
09 0138  1.4  24 0139  1.6  09 0136  1.4  24 0153  1.5  09 0211  1.4  24 0304  1.3
   0806  0.5     0747  0.2     0706  0.3     0739  0.2     0741  0.1     0826  0.1
   1417  1.5     1311  1.4     1424  1.5     1321  1.5     1519  1.4     1458  1.4
   1943  0.1     2019  0.1     1945  0.2     2119  0.3     2039  0.3     2349  0.5
10 0206  1.4  25 0215  1.6  10 0206  1.5  25 0236  1.5  10 0245  1.4  25 0353  1.3
   0732  0.3     0806  0.2     0728  0.2     0758  0.2     0809  0.1     0902  0.1
   1458  1.5     1358  1.5     1502  1.5     1413  1.5     1602  1.4     1556  1.5
   2013  0.0     2102  0.1     2019  0.2     2228  0.4     2111  0.4     2026  0.8
                                                                        2211  0.8
11 0239  1.5  26 0256  1.6  11 0239  1.5  26 0315  1.4  11 0313  1.4  26 0054  0.7
   0754  0.2     0821  0.2     0758  0.1     0821  0.2     0845  0.1     0438  1.2
   1534  1.5     1443  1.5     1545  1.5     1509  1.5     1645  1.4     0943  0.1
   2047  0.0     2138  0.2     2053  0.2     2347  0.5     2141  0.4     1645  1.5
                                                                        2056  0.7
                                                                        2353  0.9
12 0308  1.5  27 0338  1.5  12 0306  1.4  27 0402  1.3  12 0343  1.3  27 0208  0.8
   0817  0.1     0838  0.2     0824  0.1     0851  0.2     0919  0.2     0523  1.1
   1606  1.5     1530  1.5     1619  1.4     1604  1.5     1719  1.4     1030  0.2
   2115  0.1     2124  0.4     2121  0.3     2041  0.7     2206  0.4     1724  1.4
                                             2256  0.8                   2128  0.6
```

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13 0338  1.5    28 0417  1.4    13 0334  1.4    28 0111  0.7    13 0409  1.2    28 0054  1.1
   0851  0.1       0900  0.2       0856  0.1       0453  1.2       1002  0.2       0338  0.8
   1645  1.4       1615  1.5       1658  1.4       0926  0.2       1758  1.4       0613  1.1
   2145  0.2       2108  0.5       2149  0.3       1656  1.4       2234  0.5       1124  0.2
                   2358  0.6                       2102  0.7                       1802  1.4
                                                                                  2204  0.5
14 0404  1.4    29 0102  0.6    14 0358  1.3    29 0000  1.0    14 0439  1.1    29 0143  1.2
   0915  0.1       0504  1.2       0926  0.2       0247  0.7       1053  0.3       0453  0.8
   1715  1.4       0930  0.2       1736  1.4       0545  1.0       1836  1.4       0717  1.0
   2206  0.2       1702  1.4       2211  0.4       1015  0.2       2302  0.6       1221  0.3
                   2121  0.6                       1741  1.4                       1843  1.3
                                                   2136  0.6                       2245  0.5
15 0430  1.3    30 0023  0.9    15 0421  1.2    30 0053  1.1    15 0528  1.0    30 0223  1.2
   0949  0.2       0258  0.7       1000  0.2       0404  0.7       1200  0.3       0549  0.8
   1753  1.3       0558  1.0       1809  1.3       0647  0.9       1911  1.3       0826  1.0
   2230  0.4       1008  0.2       2239  0.5       1117  0.3       2334  0.6       1315  0.3
                   1753  1.3                       1823  1.3                       1917  1.2
                   2151  0.6                       2206  0.6                       2321  0.5
                                                31 0139  1.2
                                                   0509  0.7
                                                   0758  0.9
                                                   1239  0.4
                                                   1904  1.2
                                                   2249  0.6
```

2021   CANANEIA - BASE SUL DO IOUSP   2021

LATITUDE 25 1.0 S   LONGITUDE 47 55.5 W   FUSO +   3 HORAS

IOUSP-BASE SUL   NIVEL MEDIO   .80 M   CARTA 1703

JULHO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0304	1.2	16	0741	1.1
	0628	0.7		1341	0.4
	0934	1.0		2021	1.2
	1409	0.4			
	2000	1.2			
02	0004	0.5	17	0030	0.6
	0343	1.1		0453	0.8
	0700	0.7		0854	1.1
	1028	1.0		1639	0.5
	1504	0.4		2124	1.1
	2053	1.1			
03	0100	0.6	18	0128	0.7
	0408	0.9		0304	0.8
	0721	0.6		0547	0.7
	1115	1.1		0956	1.1
	1602	0.5		1821	0.5
	2200	1.1		2254	1.1
04	0234	0.7	19	0619	0.5
	0411	0.7		1054	1.2
	0732	0.6		1947	0.5
	1200	1.2			
	1706	0.5			
	2317	1.1			
05	0711	0.5	20	0021	1.1
	1245	1.3		0656	0.4
	1813	0.5		1151	1.3
				2054	0.4
06	0024	1.2	21	0123	1.2
	0651	0.4		0728	0.2
	1328	1.3		1251	1.3
	1915	0.5		2149	0.4
07	0111	1.3	22	0211	1.3
	0708	0.2		0800	0.1
	1413	1.4		1353	1.4
	2006	0.4		2239	0.4
08	0154	1.3	23	0258	1.3
	0736	0.2		0834	0.1
	1500	1.4		1451	1.4
	2045	0.4		2323	0.5
09	0230	1.4	24	0339	1.4
	0808	0.1		0908	0.0
	1547	1.4		1543	1.4
	2115	0.4		2036	0.7
				2202	0.7
10	0304	1.4	25	0008	0.7
	0847	0.1		0417	1.3
	1624	1.5		0943	0.0
	2141	0.4		1624	1.5
				2054	0.6
11	0338	1.3	26	0008	0.8
	0924	0.1		0106	0.8
	1702	1.5		0500	1.3
	2204	0.4		1019	0.1
				1702	1.5
				2123	0.4
12	0408	1.3	27	0109	1.0
	1008	0.1		0247	1.0
	1739	1.5		0547	1.2
	2228	0.4		1058	0.1
				1741	1.4

AGOSTO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0024	0.5	16	0041	0.6
	0400	0.9		0341	0.8
	0702	0.7		0541	0.7
	1041	1.0		0926	1.1
	1519	0.6		1251	0.8
	2108	1.0		1509	0.9
				1856	0.5
				2239	0.9
02	0119	0.6	17	0615	0.5
	0409	0.8		1041	1.1
	0711	0.6		1326	0.9
	1132	1.1		1545	1.0
	1704	0.6		2000	0.5
	2232	1.0			
03	0715	0.5	18	0021	1.0
	1221	1.2		0653	0.3
	1839	0.6		1151	1.2
	2356	1.1		1428	1.1
				1602	1.1
				2053	0.4
04	0715	0.4	19	0121	1.1
	1309	1.3		0721	0.2
	1938	0.5		1254	1.3
				2136	0.4
05	0056	1.2	20	0204	1.3
	0724	0.3		0753	0.1
	1358	1.4		1351	1.3
	2017	0.5		2211	0.5
06	0141	1.3	21	0245	1.4
	0749	0.2		0821	0.0
	1443	1.4		1438	1.4
	2051	0.4		2245	0.5
07	0219	1.4	22	0321	1.5
	0815	0.1		0851	0.0
	1523	1.5		1519	1.5
	2115	0.4		2028	0.6
08	0256	1.4	23	0358	1.5
	0851	0.0		0919	0.0
	1602	1.6		1600	1.5
	2136	0.3		2047	0.4
09	0330	1.4	24	0436	1.4
	0924	0.0		0951	0.1
	1641	1.6		1638	1.5
	2156	0.3		2111	0.3
10	0402	1.4	25	0508	1.3
	1002	0.1		1019	0.1
	1713	1.6		1709	1.4
	2213	0.3		2149	0.2
11	0432	1.4	26	0547	1.2
	1036	0.1		1053	0.2
	1753	1.5		1745	1.4
	2236	0.3		2215	0.2
12	0504	1.3	27	0241	1.1
	1106	0.2		0436	1.1
	1828	1.4		0624	1.1
	2300	0.3		1123	0.3
				1815	1.3

SETEMBRO

DIA	HORA H M	ALT M	DIA	HORA H M	ALT M
01	0158	0.7	16	0017	1.0
	0302	0.7		0634	0.3
	0658	0.5		1158	1.1
	1206	1.2		1324	1.1
	1858	0.6		1547	1.2
	2328	1.0		2038	0.4
02	0708	0.3	17	0108	1.2
	1256	1.3		0702	0.2
	1936	0.5		1254	1.2
				2109	0.4
03	0039	1.1	18	0149	1.3
	0724	0.2		0728	0.0
	1339	1.4		1338	1.3
	2004	0.4		2141	0.5
04	0124	1.3	19	0223	1.5
	0749	0.1		0756	0.0
	1417	1.5		1415	1.4
	2034	0.3		2123	0.5
05	0204	1.4	20	0300	1.5
	0813	0.0		0823	0.0
	1456	1.6		1454	1.5
	2056	0.3		2004	0.4
06	0239	1.5	21	0336	1.5
	0845	0.0		0851	0.0
	1534	1.6		1530	1.5
	2115	0.2		2026	0.3
07	0311	1.5	22	0406	1.5
	0913	0.0		0917	0.0
	1609	1.6		1604	1.5
	2132	0.2		2058	0.2
08	0345	1.5	23	0441	1.4
	0941	0.0		0947	0.1
	1651	1.6		1638	1.4
	2149	0.2		2126	0.1
09	0415	1.5	24	0509	1.3
	1002	0.1		1011	0.2
	1726	1.5		1708	1.3
	2208	0.2		2158	0.1
10	0451	1.4	25	0549	1.2
	1017	0.3		1041	0.3
	1806	1.4		1739	1.2
	2234	0.3		2226	0.2
11	0530	1.3	26	0319	1.0
	1036	0.4		0632	1.1
	1358	0.7		1106	0.5
	1456	0.7		1809	1.1
	1854	1.2		2258	0.3
	2302	0.3			
12	0623	1.2	27	0315	1.0
	1054	0.6		0502	0.9
	1400	0.9		0732	1.0
	1643	0.7		1138	0.6
	1949	1.0		1854	1.0

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                 2200  0.3                      2253  0.2          2336  0.4          2328  0.4
13 0441  1.2  28 0156  1.1   13 0547  1.2  28 0302  1.1   13 0743  1.0  28 0321  0.9
   1056  0.2     0406  1.0      1130  0.4     0538  1.0      1113  0.7     0541  0.8
   1811  1.5     0632  1.1      1908  1.3     0719  1.0      1426  1.0     0853  1.0
   2254  0.4     1138  0.2      2324  0.4     1200  0.5      1800  0.6     1208  0.8
                 1813  1.4                    1851  1.2      2100  0.9     1500  0.9
                 2236  0.3                    2321  0.3                    1713  0.8
                                                                          2000  0.9
14 0519  1.2  29 0230  1.1   14 0651  1.1  29 0323  1.0   14 0013  0.6  29 0004  0.6
   1147  0.2     0517  0.9      1154  0.5     0608  0.9      0319  0.7     0315  0.8
   1853  1.4     0728  1.0      1543  0.6     0836  0.9      0517  0.7     0600  0.6
   2319  0.5     1221  0.3      2000  1.1     1245  0.6      0904  1.0     1019  1.0
                 1849  1.3      2358  0.5     1934  1.1      1149  0.8     1806  0.7
                 2308  0.3                    2356  0.4      1458  1.2     2134  0.9
                                                            1902  0.5
                                                            2245  0.8
15 0619  1.1  30 0304  1.1   15 0808  1.1  30 0345  0.9   15 0600  0.5  30 0111  0.7
   1241  0.3     0608  0.8      1213  0.7     0632  0.7      1036  1.0     0238  0.7
   1934  1.3     0836  1.0      1451  0.8     0953  1.0      1221  1.0     0617  0.5
   2354  0.5     1309  0.4      1732  0.6     1358  0.7      1526  1.2     1143  1.1
                 1924  1.2      2102  1.0     2036  1.0      1956  0.4     1845  0.6
                 2349  0.4                                                2304  1.0
              31 0338  1.1                  31 0038  0.6
                 0645  0.8                     0351  0.8
                 0941  1.0                     0649  0.6
                 1406  0.5                     1102  1.0
                 2008  1.1                     1802  0.7
                                               2158  0.9
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2021                    CANANEIA - BASE SUL DO IOUSP                    2021

          LATITUDE 25  1.0 S     LONGITUDE  47 55.5 W    FUSO +  3 HORAS

  IOUSP-BASE SUL                 NIVEL MEDIO  .80 M                 CARTA 1703


      OUTUBRO                  NOVEMBRO                  DEZEMBRO


      HORA ALT    HORA ALT      HORA ALT    HORA ALT      HORA ALT    HORA ALT
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 0641 0.3 16 0043 1.2  01 0013 1.3 16 0132 1.4  01 0013 1.4 16 0145 1.4
   1232 1.3    0626 0.2     0706 0.1    0647 0.2     0739 0.2    0700 0.3
   1909 0.5    1224 1.2     1309 1.5    1309 1.3     1321 1.4    1317 1.3
              2047 0.5     1930 0.3    1847 0.4     1930 0.3    1900 0.3
02 0011 1.1 17 0121 1.4  02 0056 1.4 17 0206 1.5  02 0102 1.5 17 0219 1.4
   0702 0.2    0654 0.1     0743 0.0    0719 0.2     0834 0.2    0739 0.3
   1309 1.4    1306 1.3     1353 1.6    1351 1.4     1408 1.4    1358 1.3
   1939 0.4    2056 0.5     1954 0.2    1911 0.3     2000 0.2    1936 0.2
03 0058 1.3 18 0200 1.5  03 0136 1.5 18 0245 1.5  03 0153 1.5 18 0300 1.5
   0732 0.1    0721 0.1     0819 0.1    0754 0.2     0941 0.3    0815 0.3
   1349 1.5    1347 1.4     1434 1.6    1424 1.4     1458 1.4    1438 1.3
   2002 0.3    1924 0.5     2017 0.2    1949 0.2     2030 0.2    2009 0.2
04 0136 1.4 19 0236 1.5  04 0215 1.6 19 0317 1.5  04 0243 1.5 19 0339 1.5
   0800 0.0    0753 0.0     0847 0.0    0824 0.2     1109 0.5    0849 0.3
   1423 1.6    1421 1.4     1515 1.5    1458 1.4     1549 1.3    1509 1.3
   2024 0.2    1939 0.3     2038 0.2    2017 0.1     2104 0.2    2047 0.1
05 0209 1.5 20 0308 1.5  05 0300 1.6 20 0356 1.5  05 0334 1.5 20 0415 1.4
   0830 0.0    0819 0.1     0851 0.3    0858 0.3     0817 0.6    0919 0.4
   1502 1.6    1456 1.4     1600 1.4    1530 1.3     1013 0.7    1545 1.3
   2045 0.2    2006 0.2     2102 0.2    2054 0.1     1243 0.6    2119 0.1
                                                     1636 1.2
                                                     2138 0.2
06 0247 1.6 21 0343 1.5  06 0345 1.5 21 0434 1.4  06 0423 1.5 21 0456 1.4
   0858 0.0    0851 0.1     0849 0.4    0924 0.3     0841 0.6    0951 0.4
   1543 1.6    1530 1.4     1651 1.3    1600 1.3     1119 0.9    1615 1.2
   2102 0.2    2039 0.1     2130 0.2    2123 0.2     1400 0.7    2200 0.2
                                                     1723 1.2
                                                     2219 0.2
07 0321 1.6 22 0413 1.4  07 0430 1.5 22 0508 1.4  07 0509 1.4 22 0534 1.4
   0915 0.1    0915 0.2     0900 0.5    0956 0.4     0909 0.6    1019 0.5
   1623 1.5    1600 1.4     1158 0.8    1626 1.2     1215 1.0    1647 1.2
   2121 0.2    2106 0.1     1409 0.7    2158 0.2     1513 0.7    2239 0.2
                           1739 1.1                 1815 1.1
                           2204 0.2                 2308 0.2
08 0358 1.5 23 0451 1.4  08 0517 1.4 23 0553 1.3  08 0600 1.3 23 0609 1.3
   0923 0.3    0945 0.3     0924 0.6    1021 0.5     0951 0.6    1053 0.5
   1704 1.4    1630 1.3     1238 1.0    1654 1.1     1308 1.2    1726 1.1
   2147 0.2    2139 0.1     1538 0.7    2232 0.3     1624 0.7    2321 0.3
                           1834 1.0                 1915 1.0
                           2249 0.3
09 0439 1.5 24 0524 1.3  09 0609 1.2 24 0636 1.2  09 0008 0.3 24 0656 1.3
   0936 0.4    1009 0.4     0958 0.6    1056 0.6     0649 1.2    1124 0.6
   1353 0.7    1656 1.2     1313 1.2    1736 1.0     1026 0.6    1823 1.1
   1753 1.2    2206 0.2     1651 0.6    2311 0.4     1400 1.2
   2211 0.2                1938 0.9                 1728 0.7
                           2345 0.4                 2023 1.0
10 0523 1.3 25 0604 1.2  10 0706 1.1 25 0723 1.2  10 0117 0.4 25 0015 0.4
   0954 0.5    1038 0.5     1032 0.7    1128 0.7     0738 1.1    0743 1.3
   1302 0.9    1726 1.1     1400 1.3    1856 1.0     1108 0.6    1206 0.6
   1539 0.7    2239 0.3     1751 0.6                 1449 1.2    1936 1.1
   1843 1.0                2054 0.9                 1821 0.7
   2249 0.3                                         2138 1.0
11 0615 1.2 26 0658 1.1  11 0134 0.5 26 0009 0.5  11 0236 0.4 26 0139 0.4
   1013 0.6    1102 0.6     0808 1.0    0819 1.1     0830 1.1    0838 1.2
   1336 1.1    1808 1.0     1108 0.8    1221 0.8     1200 0.7    1304 0.7
   1656 0.6    2309 0.4     1443 1.3    1438 0.8     1532 1.1    2047 1.1
   1945 0.9                1841 0.5    1656 0.8     1904 0.6
   2324 0.4                2211 0.9    2023 1.0     2241 1.1
12 0723 1.1 27 0800 1.0  12 0408 0.4 27 0409 0.5  12 0347 0.4 27 0426 0.4
   1047 0.7    1138 0.8     0917 1.0    0924 1.2     0930 1.0    0939 1.2
   1408 1.2    1451 0.9     1200 0.8    1728 0.7     1302 0.7    1708 0.7
   1800 0.5    1708 0.9     1519 1.2    2141 1.0     1609 1.0    2151 1.2
   2102 0.8    1930 0.9     1921 0.5                 1943 0.6
```

	2356	0.5		2317	1.1					2336	1.2
13	0026	0.6	28	0258	0.7	13	0500	0.4	28	0506	0.3	13	0445	0.4	28	0543	0.4

Day group 1–2:

Day	Time	Ht	Day	Time	Ht
	2356	0.5		2317	1.1
13	0026	0.6	28	0258	0.7
	0300	0.6		0451	0.6
	0423	0.6		0911	1.0
	0847	1.0		1230	0.9
	1113	0.8		1356	0.9
	1447	1.3		1749	0.7
	1856	0.5		2102	0.9
	2239	0.9			
14	0521	0.5	29	0523	0.5
	1006	1.0		1038	1.1
	1158	1.0		1811	0.6
	1515	1.2		2226	1.0
	1941	0.4			
	2354	1.1			
15	0558	0.3	30	0558	0.3
	1130	1.1		1143	1.3
	1308	1.1		1839	0.5
	1538	1.1		2328	1.1
	2015	0.4			
			31	0632	0.2
				1228	1.4
				1902	0.4

Day group 3–4:

Day	Time	Ht	Day	Time	Ht
	2317	1.1			
13	0500	0.4	28	0506	0.3
	1030	1.0		1036	1.2
	1313	0.9		1758	0.5
	1554	1.0		2239	1.2
	1958	0.5			
14	0008	1.2	29	0558	0.2
	0539	0.3		1138	1.3
	1136	1.1		1830	0.4
	2021	0.5		2328	1.3
15	0054	1.3	30	0649	0.2
	0613	0.2		1232	1.4
	1226	1.2		1900	0.3
	2015	0.5			

Day group 5–6:

Day	Time	Ht	Day	Time	Ht
	2336	1.2			
13	0445	0.4	28	0543	0.4
	1038	1.1		1051	1.2
	1441	0.7		1758	0.5
	1654	0.8		2249	1.2
	2002	0.6			
14	0021	1.2	29	0651	0.3
	0534	0.4		1158	1.2
	1139	1.1		1841	0.4
	1954	0.6		2345	1.3
15	0102	1.3	30	0756	0.3
	0619	0.3		1300	1.3
	1234	1.2		1921	0.3
	1824	0.4			
			31	0041	1.4
				0902	0.3
				1356	1.3
				2000	0.2

```
              FASES  DA  LUA  PARA  O  ANO  DE  2020

       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  3   4  48    JAN 10  19  23    JAN 17 13   7
   JAN 24  21  45     FEV  2   1  34    FEV  9   7  15    FEV 15 22  17
   FEV 23  15  29     MAR  2  19  43    MAR  9  17  15    MAR 16  9  23
   MAR 24   9  18     ABR  1  10   5    ABR  8   1  59    ABR 14 22  37
   ABR 23   2   6     ABR 30  20  25    MAI  7  10  20    MAI 14 13  45
   MAI 22  17  16     MAI 30   3  21    JUN  5  19   5    JUN 13  6  16
   JUN 21   6  24     JUN 28   8  12    JUL  5   4  55    JUL 12 23  35
   JUL 20  17  31     JUL 27  12  35    AGO  3  16  21    AGO 11 17   6
   AGO 19   3   0     AGO 25  18   7    SET  2   5  48    SET 10  9  58
   SET 17  11  38     SET 24   2   9    OUT  1  21  27    OUT 10  1  14
   OUT 16  20  15     OUT 23  13  36    OUT 31  15   2    NOV  8 14  10
   NOV 15   5  39     NOV 22   4  49    NOV 30   9  33    DEZ  8  0  46
   DEZ 14  16  26     DEZ 21  23  34    DEZ 30   3  25


   TEMPO  SEGUNDO  O  TMG
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FASES DA LUA PARA O ANO DE 2021

```
    LUA NOVA         Q. CRESCENTE       LUA CHEIA          Q. MINGUANTE

MES   D   H   M     MES   D   H   M     MES   D   H   M     MES   D   H   M


                                                           JAN   6   9  37
JAN 13   4  51     JAN 20  20  46     JAN 28  19   5       FEV   4  17  35
FEV 11  18  51     FEV 19  18  31     FEV 27   7  57       MAR   6   1  29
MAR 13  10  13     MAR 21  14  32     MAR 28  18  22       ABR   4   9  57
ABR 12   2  29     ABR 20   6  59     ABR 27   3   6       MAI   3  19  35
MAI 11  18  54     MAI 19  19  16     MAI 26  10  55       JUN   2   7   3
JUN 10  10  40     JUN 18   3  56     JUN 24  18  34       JUL   1  20  54
JUL 10   1   4     JUL 17  10  11     JUL 24   2  46       JUL  31  13  15
AGO  8  13  51     AGO 15  15  24     AGO 22  12  25       AGO  30   7  32
SET  7   1  15     SET 13  20  52     SET 21   0  26       SET  29   2  33
OUT  6  11  46     OUT 13   3  44     OUT 20  15  28       OUT  28  20  45
NOV  4  21  56     NOV 11  13   1     NOV 19   9  19       NOV  27  12  54
DEZ  4   8   5     DEZ 11   1  37     DEZ 19   4  40       DEZ  27   2  28
```

TEMPO SEGUNDO O TMG