GEN 2.1 MEASURING SYSTEM, AIRCRAFT MARKINGS, HOLIDAYS

1. UNITS OF MEASURMENT

The table of units of measurements shown below will be used by aeronautical stations within SARAJEVO FIR for air and ground operations.

For measurement of	Units
Distance used in navigation, position reporting, etc. — generally in excess of 2 nautical miles.	Nautical miles and tenths
Relatively short distances such as those relating to aerodromes (e.g. runway lengths)	Meters
Altitudes, elevations and heights	Feet
Horizontal speed including wind speed	Knots
Vertical speed	Feet per minute
Wind direction for landing and taking off	Degrees Magnetic
Wind direction except for landing and taking off	Degrees True
Visibility including runway visual range	Kilometres or meters
Altimeter setting	Hectopascal
Temperature	Degrees Celsius
Weight	Metric tonnes or kilogrammes
Time	Hours and minutes, beginning at midnight UTC

1.1 TEMPORAL REFERENCE SYSTEM

Coordinated Universal Time (UTC) and the Gregorian calendar are used by air navigation services and in publications issued by the Aeronautical Information Service (AIS). Midnight is designated as 24.00 for the end of the day and 00.00 for the beginning of the day. Reporting of time is expressed to the nearest minute, e.g. 12:40:35 is reported as 1241. Time checks to aircraft are accurate within 1 second. Times between brackets are the times during the Summer time period.

In the AIP and associated publications, the expression “summer period” will indicate that part of the year in which “daylight saving time” is in force. The other part of the year will be named the “winter period”. The “summer period” will be introduced every year on the last Sunday in MAR at 0100 UTC and it will cease on the last Sunday in OCT at 0100 UTC. Times applicable during the “summer period” are given in brackets.

The local time in Bosnia and Herzegovina is the Local Mean Time (LMT = UTC + 1 HR). The local time in Bosnia and Herzegovina during the summer time period is (LMT = UTC + 2 HR).

1.2 HORIZONTAL REFERENCE SYSTEM

1.2.1 NAME/DESIGNATION OF SYSTEM

All published geographical coordinates indicating latitude and longitude are expressed in terms of the World Geodetic System-1984 (WGS-84) geodetic reference datum. If coordinates are not expressed in terms of the WGS-84, than they are marked by an asterisk (*) – see 3.6.

Note: *Bosnia and Herzegovina carried out campaign of measuring of geographical coordinates in WGS-84 during 2008/2009.*

1.2.2 PROJECTION

Projection is expressed in term of Universal Transverse Mercator (UTM).

1.3 ELLIPSOID

Ellipsoid is expressed in terms of the World Geodetic System-1984 (WGS-84) ellipsoid.

1.3.1 DATUM

The World Geodetic System-1984 (WGS-84) is used.

1.3.2 AREA OF APPLICATION

The area of application for the published geographical coordinates coincides with the area of responsibility of the Aeronautical Information Service, i.e. the entire territory of the Bosnia and Herzegovina (Sarajevo FIR).

1.3.3 USE OF AN ASTERISK TO IDENTIFY PUBLISHED GEOGRAPHICAL COORDINATES

An asterisk (*) will be used to identify those published geographical coordinates which have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the accuracy requirements in ANNEX 11, Chapter 2 and Annex 14, Volumes I and II, Chapter 2.

1.4 VERTICAL REFERENCE SYSTEM

1.4.1 NAME/DESIGNATION OF SYSTEM

The vertical reference system corresponds to mean sea level (MSL).

1.4.2 GEOID MODEL

The geoid model used is the Earth Gravitational Model 1996-(EGM-96).

1.5 AIRCRAFT NATIONALITY AND REGISTRATION MARKS

The nationality mark for civil aircraft registered in Bosnia and Herzegovina is the letters E7.
The nationality mark is followed by hyphen and a registration mark:
- a four figure group for gliders, including motor gliders;
- a three letter group for other aircraft.

1.6 PUBLIC HOLIDAYS

BOSNIA AND HERZEGOVINA

Name	Date
Labour Day	1st and 2nd May
New Year’s Day	1st and 2nd January

FEDERATION OF BOSNIA AND HERZEGOVINA

Name	Date
Independence Day	1 March
Statehood Day	25 November

REPUBLIC OF SRPSKA

Name	Date
Day of Dayton Agreement	21 November
Day of Republic of Srpska	9 January
Victory Day	9 May

RELIGIOUS HOLIDAYS

Name	Date
Bayram (the end of Ramadan - Eid ul-Fitr)	Movable
Christmas (catholic)	25 December
Christmas (orthodox)	7 January
Easter (catholic)	Movable
Easter (orthodox)	Movable
Kurban Bayram (70 days after the end of Ramadan - Eid ul-Adha)	Movable

GEN 2.2 ABBREVIATIONS USED IN AIS PUBLICATIONS

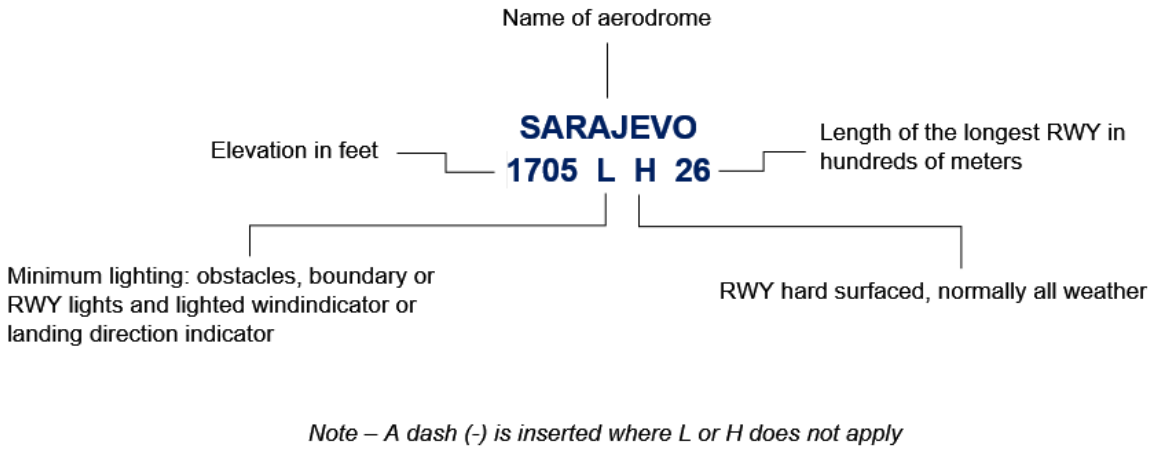
For information regarding this section, see eAIP BiH at https://eaip.bhansa.gov.ba GEN 2.2

GEN 2.3 CHART SYMBOLS

1. AERODROMES

1.1. CHARTS OTHER THAN APPROACH CHARTS

Airport	
Joint civil and military airport	
Airfield	
Heliport	
Abandoned or closed aerodrome	

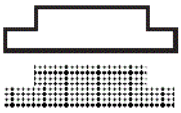


Note – A dash (-) is inserted where L or H does not apply

1.2. Approach charts

The aerodrome on which the flight procedure is based	
Aerodrome affecting the traffic pattern on the aerodrome on which the procedure is based	

2. AERODROME CHARTS

Hard surface runway	
Unpaved runway	
Stopway	
Taxiways and parking areas	
Helicopter alighting area on aerodromes	
Aerodrome reference point (ARP)	
Runway visual range (RVR) observation site (Scatter Meter)	
Transmissometer (RVR)	
Ceilometer	
Point light	
Obstacle light	
Aeronautical ground light or Flashing sequence light	
Threshold lights	
PAPI	

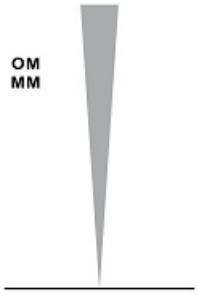
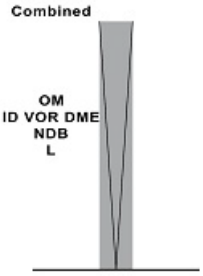
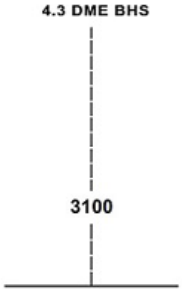
ILS Localizer	
Collocated GPand DME facility	
VHF Direction finder	
Displaced threshold	
Runway-holding positions Pattern A Pattern B Note: For application, see Annex 14, Volume I, paragraph 5.2.10	
Flood lights pole	
Landing direction indicator • lighted • unlighted	 
Wind cone or Wind direction indicator • lighted • unlighted	 
Anemometer	
Taxiway designation	
Control tower	
Fence	
Runway guard lights	

3. AERODROME OBSTACLE CHARTS (TYPE A)

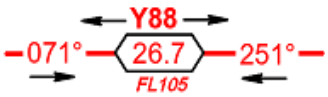
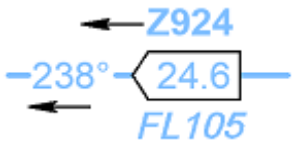
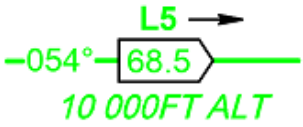
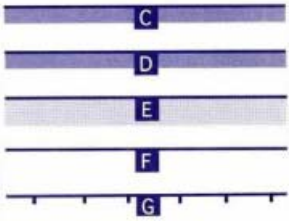
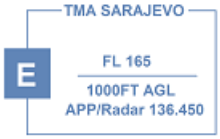
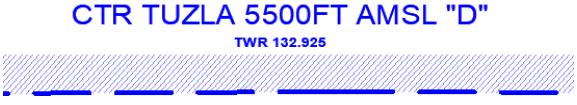
	Plan	Profile
Tree or Shrub		
Pole, Tower, Antenna, etc.		
Buildings or large structure		
Transmission line or Overhead cable		
Railroad		
Identification number		
Terrain penetrating obstacle plane		
Wooded area penetrating obstacle plane		
Escarpment		
Stopway		
Clearway		

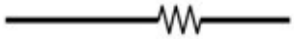
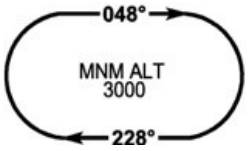
4. RADIO NAVIGATION AIDS

Basic radio navigation aid symbol	
Non-directional radio beacon (NDB)	
VHF omnidirectional radio range (VOR)	
Distance measuring equipment (DME)	
Collocated VOR and DME facility	
Radio marker beacon	
Compass rose orientated on the chart to the MAG North	
Instrument landing system	Plan  Profile 

Profiles for radio navigation aids	
	
	
Profile view of DME distance	
Profile of a step-down fix with crossing altitude	

5 AIR TRAFFIC SERVICES

Flight Information Region (FIR)	
RNAV route BI-DIRECTIONAL • Route orientation • ATS route designator • Distance between reporting points (in NM) • Lower limit	
RNAV route UNI DIRECTIONAL, EVEN FL • Route orientation • ATS route designator • Distance between reporting points (in NM) • Lower limit	
RNAV route UNI DIRECTIONAL, ODD FL • Route orientation • ATS route designator • Distance between reporting points (in NM) • Lower limit	
Special instrument go-around procedure	
Line of Responsibility / ATS provision boundary	
State boundary	
Airspace classifications	
Terminal control area (TMA) • Name of the airspace • Airspace classification • Vertical limits • Frequency	
Control zone (CTR) • Name of the airspace • Airspace classification • Vertical limits • Frequency	

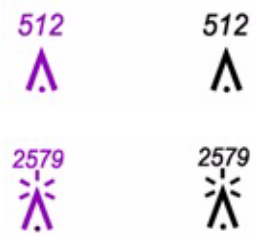
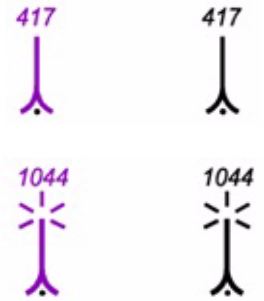
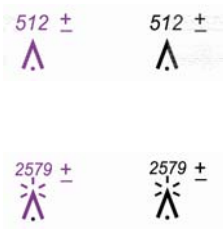
Aerodrome Traffic Zone (ATZ)	
Scale-break on route	
Compulsory reporting point	
Reporting point on request	
Change-over point (COP)	
Holding pattern • Magnetic track • Minimum altitude in FT MSL	
Way-point (WPT)	Fly-over WPT  Fly-by WPT 
Final approach fix (FAF)	
Restricted airspace Active only as notified by NOTAM Identification of area Vertical limits • P = Prohibited • R = Restricted • D = Danger	
Temporary reserved and segregated airspace Active only as notified by NAUP/NUUP -Identification of area -Nationality letter • TS = Temporary segregated • TR = Temporary reserved -Vertical limits	
Common boundary of two areas	

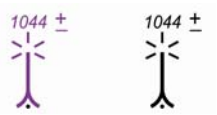
Recommended VFR Routes	
Paragliding and hang gliding activity area	
Glider activity area	
Area with parachute activity	
Aero tow operations	
Winch-launching	

5.1 Altitudes/flight levels

Altitude / flight level “window”	7 000 / 4 000 FL 135 / 10 000
“At or above” altitude / flight level	7 000 FL 110
“At or below” altitude / flight level	5 000 FL 110
“Mandatory” altitude / flight level	5 000 FL 110
Minimum flight altitude / flight level	5 000 FL 110
“Expected” altitude	Expect 5 000 Expect FL 110

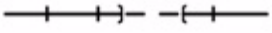
6 OBSTACLES

Obstacles • unlighted / lighted • Elevation on top in FT AMSL	
Group of obstacles	
Lighted group obstacles	
Obstacles having a height of the order of 100 M AGL • unlighted / lighted • Elevation on top in FT AMSL	
Group of obstacles having a height of the order of 100 M AGL • lighted • Elevation on top in FT AMSL	
Obstacles with no elevation data	
Obstacles • unlighted / lighted • Elevation on top in FT AMSL (of doubtful accuracy)	

Obstacles having a height of the order of 100 M AGL Elevation on top in FT AMSL (of doubtful accuracy)	

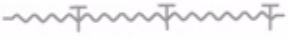
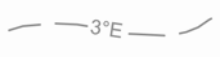
7 MISCELLANEOUS

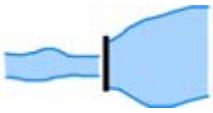
Contours	
Approximate contours	
Bluff, cliff or escarpment	
Mountain pass with elevation in FT AMSL	
Highest spot elevation on chart in FT AMSL	
Spot elevation in FT AMSL	
Spot elevation (of doubtful accuracy)	
Area minimum altitude (AMA)	
Shore line	
Large river	
River, small river, brooks	

Lake	
Swamp	
Aqueduct	
Spring, water hole	
Reservoir	
City, town	
Town, village	
Buildings	
Railroad (single track)	
Railroad (two or more tracks)	
Railroad bridge	
Railroad tunnel	
Railroad station	

Cable way	

7.1 Higway and roads

Dual highway	
Highway	
Dual highway under construction	
Primary road	
Secondary road	
Road under construction	
Road bridge	
Road tunnel	
Transmission line or Overhead cable	
Isogonic line	
State boundary	

Dam	
Hippodrome or stadium	
Ruins	
Fort	
Church	
Mosque	
Wind turbine - unlighted and lighted	
Wind turbines - minor group and group in major area, lighted	

GEN 2.4 LOCATION INDICATORS

The location indicators marked with an asterisk (*) cannot be used in the address component of AFS messages.

Table 1: International Airports

ENCODE	
Location	Indicator
BANJA LUKA	LQBK
MOSTAR	LQMO
SARAJEVO	LQSA
TUZLA	LQTZ

DECODE	
Indicator	Location
LQBK	BANJA LUKA
LQMO	MOSTAR
LQSA	SARAJEVO
LQTZ	TUZLA

Table 2:Airfields

ENCODE	
Location	Indicator
BIHAĆ	LQBI*
BIJELJINA	LQBN*
BOSANSKI PETROVAC	LQMP*
CILJUGE - ŽIVINICE	LQCG*
DOBOJ	LQDO*
GLAMOČ	LQGL*
JEGIN LUG - TUZLA	LQJL*
KREŠEVO	LQKR*
KUPRES	LQKU*
LIVNO	LQLV*
MODRIČA	LQMD*
MOSTAR - JESENICA	LQMJ*
NIŠIĆI	LQNI*
NOVI TRAVNIK	LQTR*
POPOVI - BIJELJINA	LQPP*
PRIJEDOR	LQPD*
SOKOLAC	LQSC*
TARČIN	LQLH*
TOMISLAVGRAD	LQTG*
TREBINJE	LQTB*
VISOKO	LQVI*
ZALUŽANI - BANJA LUKA	LQBZ*
ĆORALIĆI	LQCO*

DECODE	
Indicator	Location
LQBI*	BIHAĆ
LQBN*	BIJELJINA
LQMP*	BOSANSKI PETROVAC
LQCG*	CILJUGE - ŽIVINICE
LQDO*	DOBOJ
LQGL*	GLAMOČ
LQJL*	JEGIN LUG - TUZLA
LQKR*	KREŠEVO
LQKU*	KUPRES
LQLV*	LIVNO
LQMD*	MODRIČA
LQMJ*	MOSTAR - JESENICA
LQNI*	NIŠIĆI
LQTR*	NOVI TRAVNIK
LQPP*	POPOVI - BIJELJINA
LQPD*	PRIJEDOR
LQSC*	SOKOLAC
LQLH*	TARČIN
LQTG*	TOMISLAVGRAD
LQTB*	TREBINJE
LQVI*	VISOKO
LQBZ*	ZALUŽANI - BANJA LUKA
LQCO*	ĆORALIĆI

Table 3: Administrative Locations

ENCODE	
Location	Indicator
BHDCA	LQBH

DECODE	
Indicator	Location
LQBH	BHDCA

Table 4: Operational Locations

ENCODE	
Location	Indicator
AFTN COM Center Sarajevo	LQQQ
SARAJEVO FIR	LQSB*

DECODE	
Indicator	Location
LQQQ	AFTN COM Center Sarajevo
LQSB*	SARAJEVO FIR

GEN 2.5 LIST OF RADIO NAVIGATION AIDS

ID	Station Name	Facility/Aid	Purpose
BAL	BANJA LUKA	DME 16, GP 16	A
BAL	BANJA LUKA	LOC 16	A
BHS	SARAJEVO	DME 11, GP 11	A
BHS	SARAJEVO	LOC 11	A
BLK	BANJA LUKA	NDB	A
DER	DERVENTA	VOR/DME	E
DNC	MOSTAR	NDB	A
IL	SARAJEVO	NDB	A
KEB	SARAJEVO	DVOR/DME	AE
KG	SARAJEVO	L	A
KIS	SARAJEVO	VOR/DME	A
LAK	BANJA LUKA	VOR/DME	A
LU	BANJA LUKA	L	A
MOS	MOSTAR	DME, GP	A
MOS	MOSTAR	LOC	A
MSR	MOSTAR	DVOR/DME	AE
NA	BANJA LUKA	L	A
OMA	OMARSKA	VOR/DME	E
TLA	TUZLA	DME 09, GP 09	A
TLA	TUZLA	LOC 09	A
TU	TUZLA	NDB	A
TZU	TUZLA	VOR/DME	A

GEN 2.6 CONVERSION TABLES

NM/KM	CONVERSION TABLE - Conversion factor 1.852									
NM	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
0	0	1.852	3.704	5.556	7.408	9.260	11.112	12.964	14.816	16.668
10	18.520	20.372	22.224	24.076	25.928	27.780	29.632	31.484	33.336	35.188
20	37.040	38.892	40.744	42.596	44.448	46.300	48.152	50.004	51.856	53.708
30	55.560	57.412	59.264	61.116	62.968	64.820	66.672	68.524	70.376	72.228
40	74.080	75.932	77.784	79.636	81.488	83.340	85.192	87.044	88.896	90.748
50	92.600	94.452	96.304	98.156	100.008	101.860	103.712	105.564	107.416	109.268
60	111.120	112.972	114.824	116.676	118.528	120.380	122.232	124.084	125.936	127.788
70	129.640	131.492	133.344	135.196	137.048	138.900	140.752	142.604	144.456	146.308
80	148.160	150.012	151.864	153.716	155.568	157.420	159.272	161.124	162.976	164.828
90	166.680	168.532	170.384	172.236	174.088	175.940	177.792	179.644	181.496	183.348
	0	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
100	185.20	203.72	222.24	240.76	259.28	277.80	296.32	314.84	333.36	351.88
200	370.40	388.92	407.44	425.96	444.48	463.00	481.52	500.04	518.56	537.08
300	555.60	574.12	592.64	611.16	629.68	648.20	666.72	685.24	703.76	722.28
400	740.80	759.32	777.84	796.36	814.88	833.40	851.92	870.44	888.96	907.48
500	926.00	944.52	963.04	981.56	1000.08	1018.60	1037.12	1055.64	1074.16	1092.68
600	1111.20	1129.72	1148.24	1166.76	1185.28	1203.80	1222.32	1240.84	1259.36	1277.88
700	1296.40	1314.92	1333.44	1351.96	1370.48	1389.00	1407.52	1426.04	1444.56	1463.08
800	1481.60	1500.12	1518.64	1537.16	1555.68	1574.20	1592.72	1611.24	1629.76	1648.28
900	1666.80	1685.32	1703.84	1722.36	1740.88	1759.40	1777.92	1796.44	1814.96	1833.48

KM/NM	CONVERSION TABLE - Conversion factor 0.5399568035									
KM	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
0	0	0.540	1.080	1.620	2.160	2.700	3.240	3.780	4.320	4.860
10	5.400	5.940	6.479	7.019	7.559	8.099	8.639	9.179	9.719	10.259
20	10.799	11.339	11.879	12.419	12.959	13.499	14.039	14.579	15.119	15.659
30	16.199	16.739	17.279	17.819	18.359	18.898	19.438	19.978	20.518	21.058
40	21.598	22.138	22.678	23.218	23.758	24.298	24.838	25.378	25.918	26.458
50	26.998	27.538	28.078	28.618	29.158	29.698	30.238	30.778	31.317	31.857
60	32.397	32.937	33.477	34.017	34.557	35.097	35.637	36.177	36.717	37.257
70	37.797	38.337	38.877	39.417	39.957	40.497	41.037	41.577	42.117	42.657
80	43.197	43.737	44.276	44.816	45.356	45.896	46.436	46.976	47.516	48.056
90	48.596	49.136	49.676	50.216	50.756	51.296	51.836	52.376	52.916	53.456
	0	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
100	53.996	59.395	64.795	70.194	75.594	80.994	86.393	91.793	97.192	102.592
200	107.991	113.391	118.790	124.190	129.590	134.989	140.389	145.788	151.188	156.587
300	161.987	167.387	172.786	178.186	183.585	188.985	194.384	199.784	205.184	210.583
400	215.983	221.382	226.782	232.181	237.581	242.981	248.380	253.780	259.179	264.579
500	269.978	275.378	280.778	286.177	291.577	296.976	302.376	307.775	313.175	318.575
600	323.974	329.374	334.773	340.173	345.572	350.972	356.371	361.771	367.171	372.570
700	377.970	383.369	388.769	394.168	399.568	404.968	410.367	415.767	421.166	426.566
800	431.965	437.365	442.765	448.164	453.564	458.963	464.363	469.762	475.162	480.562
900	485.961	491.361	496.760	502.160	507.559	512.959	518.359	523.758	529.158	534.557

M/FT	CONVERSION TABLE Conversion factor 3.280839895									
M	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
0	0	3.28	6.56	9.84	13.12	16.40	19.69	22.97	26.25	29.53
10	32.81	36.09	39.37	42.65	45.93	49.21	52.49	55.77	59.06	62.34
20	65.62	68.90	72.18	75.46	78.74	82.02	85.30	88.58	91.86	95.14
30	98.43	101.71	104.99	108.27	111.55	114.83	118.11	121.39	124.67	127.95
40	131.23	134.51	137.80	141.08	144.36	147.64	150.92	154.20	157.48	160.76
50	164.04	167.32	170.60	173.88	177.17	180.45	183.73	187.01	190.29	193.57
60	196.85	200.13	203.41	206.69	209.97	213.25	216.54	219.82	223.10	226.38
70	229.66	232.94	236.22	239.50	242.78	246.06	249.34	252.62	255.91	259.19
80	262.47	265.75	269.03	272.31	275.59	278.87	282.15	285.43	288.71	291.99
90	295.28	298.56	301.84	305.12	308.40	311.68	314.96	318.24	321.52	324.80
	0	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
100	328.08	360.89	393.70	426.51	459.32	492.13	524.93	557.74	590.55	623.36
200	656.17	688.98	721.78	754.59	787.40	820.21	853.02	885.83	918.64	951.44
300	984.25	1017.06	1049.87	1082.68	1115.49	1148.29	1181.10	1213.91	1246.72	1279.53
400	1312.34	1345.14	1377.95	1410.76	1443.57	1476.38	1509.19	1541.99	1574.80	1607.61
500	1640.42	1673.23	1706.04	1738.85	1771.65	1804.46	1837.27	1870.08	1902.89	1935.70
600	1968.50	2001.31	2034.12	2066.93	2099.74	2132.55	2165.35	2198.16	2230.97	2263.78
700	2296.59	2329.40	2362.20	2395.01	2427.82	2460.63	2493.44	2526.25	2559.06	2591.86
800	2624.67	2657.48	2690.29	2723.10	2755.91	2788.71	2821.52	2854.33	2887.14	2919.95
900	2952.76	2985.56	3018.37	3051.18	3083.99	3116.80	3149.61	3182.41	3215.22	3248.03
	0	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**
1000	3280.84	3608.92	3937.01	4265.09	4593.18	4921.26	5249.34	5577.43	5905.51	6233.60
2000	6561.68	6889.76	7217.85	7545.93	7874.02	8202.10	8530.18	8858.27	9186.35	9514.44
3000	9842.52	10170.60	10498.69	10826.77	11154.86	11482.94	11811.02	12139.11	12467.19	12795.28
4000	13123.36	13451.44	13779.53	14107.61	14435.70	14763.78	15091.86	15419.95	15748.03	16076.12
5000	16404.20	16732.28	17060.37	17388.45	17716.54	18044.62	18372.70	18700.79	19028.87	19356.96
6000	19685.04	20013.12	20341.21	20669.29	20997.38	21325.46	21653.54	21981.63	22309.71	22637.80
7000	22965.88	23293.96	23622.05	23950.13	24278.22	24606.30	24934.38	25262.47	25590.55	25918.64
8000	26246.72	26574.80	26902.89	27230.97	27559.06	27887.14	28215.22	28543.31	28871.39	29199.48
9000	29527.56	29855.64	30183.73	30511.81	30839.90	31167.98	31496.06	31824.15	32152.23	32480.31

FT/M	CONVERSION TABLE Conversion factor 0.3048									
FT	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
0	0	0.30	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74
10	3.05	3.35	3.66	3.96	4.27	4.57	4.88	5.18	5.49	5.79
20	6.10	6.40	6.71	7.01	7.32	7.62	7.92	8.23	8.53	8.84
30	9.14	9.45	9.75	10.06	10.36	10.67	10.97	11.28	11.58	11.89
40	12.19	12.50	12.80	13.11	13.41	13.72	14.02	14.33	14.63	14.94
50	15.24	15.54	15.85	16.15	16.46	16.76	17.07	17.37	17.68	17.98
60	18.29	18.59	18.90	19.20	19.51	19.81	20.12	20.42	20.73	21.03
70	21.34	21.64	21.95	22.25	22.56	22.86	23.16	23.47	23.77	24.08
80	24.38	24.69	24.99	25.30	25.60	25.91	26.21	26.52	26.82	27.13
90	27.43	27.74	28.04	28.35	28.65	28.96	29.26	29.57	29.87	30.18
	0	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
100	30.48	33.53	36.58	39.62	42.67	45.72	48.77	51.82	54.86	57.91
200	60.96	64.01	67.06	70.10	73.15	76.20	79.25	82.30	85.34	88.39
300	91.44	94.49	97.54	100.58	103.63	106.68	109.73	112.78	115.82	118.87
400	121.92	124.97	128.02	131.06	134.11	137.16	140.21	143.26	146.30	149.35
500	152.40	155.45	158.50	161.54	164.59	167.64	170.69	173.74	176.78	179.83
600	182.88	185.93	188.98	192.02	195.07	198.12	201.17	204.22	207.26	210.31
700	213.36	216.41	219.46	222.50	225.55	228.60	231.65	234.70	237.74	240.79
800	243.84	246.89	249.94	252.98	256.03	259.08	262.13	265.18	268.22	271.27
900	274.32	277.37	280.42	283.46	286.51	289.56	292.61	295.66	298.70	301.75
	0	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**
1000	304.80	335.28	365.76	396.24	426.72	457.20	487.68	518.16	548.64	579.12
2000	609.60	640.08	670.56	701.04	731.52	762.00	792.48	822.96	853.44	883.92
3000	914.40	944.88	975.36	1005.84	1036.32	1066.80	1097.28	1127.76	1158.24	1188.72
4000	1219.20	1249.68	1280.16	1310.64	1341.12	1371.60	1402.08	1432.56	1463.04	1493.52
5000	1524.00	1554.48	1584.96	1615.44	1645.92	1676.40	1706.88	1737.36	1767.84	1798.32
6000	1828.80	1859.28	1889.76	1920.24	1950.72	1981.20	2011.68	2042.16	2072.64	2103.12
7000	2133.60	2164.08	2194.56	2225.04	2255.52	2286.00	2316.48	2346.96	2377.44	2407.92
8000	2438.40	2468.88	2499.36	2529.84	2560.32	2590.80	2621.28	2651.76	2682.24	2712.72
9000	2743.20	2773.68	2804.16	2834.64	2865.12	2895.60	2926.08	2956.56	2987.04	3017.52
	0	**1000**	**2000**	**3000**	**4000**	**5000**	**6000**	**7000**	**8000**	**9000**
10000	3048.0	3352.8	3657.6	3962.4	4267.2	4572.0	4876.8	5181.6	5486.4	5791.2
20000	6096.0	6400.8	6705.6	7010.4	7315.2	7620.0	7924.8	8229.6	8534.4	8839.2
30000	9144.0	9448.8	9753.6	10058.4	10363.2	10668.0	10972.8	11277.6	11582.4	11887.2
40000	12192.0	12496.8	12801.6	13106.4	13411.2	13716.0	14020.8	14325.6	14630.4	14935.2
50000	15240.0	15544.8	15849.6	16154.4	16459.2	16764.0	17068.8	17373.6	17678.4	17983.2

NM/M	CONVERSION TABLE Conversion factor 1852									
NM	**.0**	**.1**	**.2**	**.3**	**.4**	**.5**	**.6**	**.7**	**.8**	**.9**
0	0	185.2	370.4	555.6	740.8	926.0	1111.2	1296.4	1481.6	1666.8
1	1852.0	2037.2	2222.4	2407.6	2592.8	2778.0	2963.2	3148.4	3333.6	3518.8
2	3704.0	3889.2	4074.4	4259.6	4444.8	4630.0	4815.2	5000.4	5185.6	5370.8
3	5556.0	5741.2	5926.4	6111.6	6296.8	6482.0	6667.2	6852.4	7037.6	7222.8
4	7408.0	7593.2	7778.4	7963.6	8148.8	8334.0	8519.2	8704.4	8889.6	9074.8
5	9260.0	9445.2	9630.4	9815.6	10000.8	10186.0	10371.2	10556.4	10741.6	10926.8
6	11112.0	11297.2	11482.4	11667.6	11852.8	12038.0	12223.2	12408.4	12593.6	12778.8
7	12964.0	13149.2	13334.4	13519.6	13704.8	13890.0	14075.2	14260.4	14445.6	14630.8
8	14816.0	15001.2	15186.4	15371.6	15556.8	15742.0	15927.2	16112.4	16297.6	16482.8
9	16668.0	16853.2	17038.4	17223.6	17408.8	17594.0	17779.2	17964.4	18149.6	18334.8

M/NM	CONVERSION TABLE Conversion factor 0.0005399568									
M	**0**	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**
0	0	0.054	0.108	0.162	0.216	0.270	0.324	0.378	0.432	0.486
1000	0.540	0.594	0.648	0.702	0.756	0.810	0.864	0.918	0.972	1.026
2000	1.080	1.134	1.188	1.242	1.296	1.350	1.404	1.458	1.512	1.566
3000	1.620	1.674	1.728	1.782	1.836	1.890	1.944	1.998	2.052	2.106
4000	2.160	2.214	2.268	2.322	2.376	2.430	2.484	2.538	2.592	2.646
5000	2.700	2.754	2.808	2.862	2.916	2.970	3.024	3.078	3.132	3.186
6000	3.240	3.294	3.348	3.402	3.456	3.510	3.564	3.618	3.672	3.726
7000	3.780	3.834	3.888	3.942	3.996	4.050	4.104	4.158	4.212	4.266
8000	4.320	4.374	4.428	4.482	4.536	4.590	4.644	4.698	4.752	4.806
9000	4.860	4.914	4.968	5.022	5.076	5.130	5.184	5.238	5.292	5.346

NM/FT	CONVERSION TABLE Conversion factor 6076.115486									
NM	**.0**	**.1**	**.2**	**.3**	**.4**	**.5**	**.6**	**.7**	**.8**	**.9**
0	0	607.6	1215.2	1822.8	2430.4	3038.1	3645.7	4253.3	4860.9	5468.5
1	6076.1	6683.7	7291.3	7899.0	8506.6	9114.2	9721.8	10329.4	10937.0	11544.6
2	12152.2	12759.8	13367.5	13975.1	14582.7	15190.3	15797.9	16405.5	17013.1	17620.7
3	18228.3	18836.0	19443.6	20051.2	20658.8	21266.4	21874.0	22481.6	23089.2	23696.9
4	24304.5	24912.1	25519.7	26127.3	26734.9	27342.5	27950.1	28557.7	29165.4	29773.0
5	30380.6	30988.2	31595.8	32203.4	32811.0	33418.6	34026.2	34633.9	35241.5	35849.1
6	36456.7	37064.3	37671.9	38279.5	38887.1	39494.8	40102.4	40710.0	41317.6	41925.2
7	42532.8	43140.4	43748.0	44355.6	44963.3	45570.9	46178.5	46786.1	47393.7	48001.3
8	48608.9	49216.5	49824.1	50431.8	51039.4	51647.0	52254.6	52862.2	53469.8	54077.4
9	54685.0	55292.7	55900.3	56507.9	57115.5	57723.1	58330.7	58938.3	59545.9	60153.5

FT/NM	CONVERSION TABLE Conversion factor 0.0001645788									
FT	**0**	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**
0	0	0.016	0.033	0.049	0.066	0.082	0.099	0.115	0.132	0.148
1000	0.165	0.181	0.197	0.214	0.230	0.247	0.263	0.280	0.296	0.313
2000	0.329	0.346	0.362	0.379	0.395	0.411	0.428	0.444	0.461	0.477
3000	0.494	0.510	0.527	0.543	0.560	0.576	0.592	0.609	0.625	0.642
4000	0.658	0.675	0.691	0.708	0.724	0.741	0.757	0.774	0.790	0.806
5000	0.823	0.839	0.856	0.872	0.889	0.905	0.922	0.938	0.955	0.971
6000	0.987	1.004	1.020	1.037	1.053	1.070	1.086	1.103	1.119	1.136
7000	1.152	1.169	1.185	1.201	1.218	1.234	1.251	1.267	1.284	1.300
8000	1.317	1.333	1.350	1.366	1.382	1.399	1.415	1.432	1.448	1.465
9000	1.481	1.498	1.514	1.531	1.547	1.563	1.580	1.596	1.613	1.629
	0	**1000**	**2000**	**3000**	**4000**	**5000**	**6000**	**7000**	**8000**	**9000**
10000	1.646	1.810	1.975	2.140	2.304	2.469	2.633	2.798	2.962	3.127
20000	3.292	3.456	3.621	3.785	3.950	4.114	4.279	4.444	4.608	4.773
30000	4.937	5.102	5.267	5.431	5.596	5.760	5.925	6.089	6.254	6.419
40000	6.583	6.748	6.912	7.077	7.241	7.406	7.571	7.735	7.900	8.064
50000	8.229	8.394	8.558	8.723	8.887	9.052	9.216	9.381	9.546	9.710

From decimal minutes of an arc to seconds of an arc - CONVERSION TABLE							
MIN	SEC	MIN	SEC	MIN	SEC	MIN	SEC
0.00	0.0	0.25	15.0	0.50	30.0	0.75	45.0
0.01	0.6	0.26	15.6	0.51	30.6	0.76	45.6
0.02	1.2	0.27	16.2	0.52	31.2	0.77	46.2
0.03	1.8	0.28	16.8	0.53	31.8	0.78	46.8
0.04	2.4	0.29	17.4	0.54	32.4	0.79	47.4
0.05	3.0	0.30	18.0	0.55	33.0	0.80	48.0
0.06	3.6	0.31	18.6	0.56	33.6	0.81	48.6
0.07	4.2	0.32	19.2	0.57	34.2	0.82	49.2
0.08	4.8	0.33	19.8	0.58	34.8	0.83	49.8
0.09	5.4	0.34	20.4	0.59	35.4	0.84	50.4
0.10	6.0	0.35	21.0	0.60	36.0	0.85	51.0
0.11	6.6	0.36	21.6	0.61	36.6	0.86	51.6
0.12	7.2	0.37	22.2	0.62	37.2	0.87	52.2
0.13	7.8	0.38	22.8	0.63	37.8	0.88	52.8
0.14	8.4	0.39	23.4	0.64	38.4	0.89	53.4
0.15	9.0	0.40	24.0	0.65	39.0	0.90	54.0
0.16	9.6	0.41	24.6	0.66	39.6	0.91	54.6
0.17	10.2	0.42	25.2	0.67	40.2	0.92	55.2
0.18	10.8	0.43	25.8	0.68	40.8	0.93	55.8
0.19	11.4	0.44	26.4	0.69	41.4	0.94	56.4
0.20	12.0	0.45	27.0	0.70	42.0	0.95	57.0
0.21	12.6	0.46	27.6	0.71	42.6	0.96	57.6
0.22	13.2	0.47	28.2	0.72	43.2	0.97	58.2
0.23	13.8	0.48	28.8	0.73	43.8	0.98	58.8
0.24	14.4	0.49	29.4	0.74	44.4	0.99	59.4

From seconds of an arc to decimal minutes of an arc - CONVERSION TABLE							
SEC	MIN	SEC	MIN	SEC	MIN	SEC	MIN
0	0.00	15	0.25	30	0.50	45	0.75
1	0.02	16	0.27	31	0.52	46	0.77
2	0.03	17	0.28	32	0.53	47	0.78
3	0.05	18	0.30	33	0.55	48	0.80
4	0.07	19	0.32	34	0.57	49	0.82
5	0.08	20	0.33	35	0.58	50	0.83
6	0.10	21	0.35	36	0.60	51	0.85
7	0.12	22	0.37	37	0.62	52	0.87
8	0.13	23	0.38	38	0.63	53	0.88
9	0.15	24	0.40	39	0.65	54	0.90
10	0.17	25	0.42	40	0.67	55	0.92
11	0.18	26	0.43	41	0.68	56	0.93
12	0.20	27	0.45	42	0.70	57	0.95
13	0.22	28	0.47	43	0.72	58	0.97
14	0.23	29	0.48	44	0.73	59	0.98

°C/°F CONVERSION TABLE									
°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
		-40	-40.0	-10	14.0	20	68.0	50	122.0
		-39	-38.2	-9	15.8	21	69.8	51	123.8
		-38	-36.4	-8	17.6	22	71.6	52	125.6
		-37	-34.6	-7	19.4	23	73.4	53	127.4
		-36	-32.8	-6	21.2	24	75.2	54	129.2
		-35	-31.0	-5	23.0	25	77.0	55	131.0
		-34	-29.2	-4	24.8	26	78.8	56	132.8
		-33	-27.4	-3	26.6	27	80.6	57	134.6
		-32	-25.6	-2	28.4	28	82.4	58	136.4
		-31	-23.8	-1	30.2	29	84.2	59	138.2
-60	-76.0	-30	-22.0	**0**	**32.0**	30	86.0	60	140.0
-59	-74.2	-29	-20.2	1	33.8	31	87.8	61	141.8
-58	-72.4	-28	-18.4	2	35.6	32	89.6	62	143.6
-57	-70.6	-27	-16.6	3	37.4	33	91.4	63	145.4
-56	-68.8	-26	-14.8	4	39.2	34	93.2	64	147.2
-55	-67.0	-25	-13.0	5	41.0	35	95.0	65	149.0
-54	-65.2	-24	-11.2	6	42.8	36	96.8	66	150.8
-53	-63.4	-23	-9.4	7	44.6	37	98.6	67	152.6
-52	-61.6	-22	-7.6	8	46.4	38	100.4	68	154.4
-51	-59.8	-21	-5.8	9	48.2	39	102.2	69	156.2
-50	-58.0	-20	-4.0	10	50	40	104.0	70	158.0
-49	-56.2	-19	-2.2	11	51.8	41	105.8		
-48	-54.4	-18	-0.4	12	53.6	42	107.6		
-47	-52.6	-17	+1.4	13	55.4	43	109.4		
-46	-50.8	-16	+3.2	14	57.2	44	111.2		
-45	-49.0	-15	+5.0	15	59.0	45	113.0		
-44	-47.2	-14	6.8	16	60.8	46	114.8		
-43	-45.4	-13	8.6	17	62.6	47	116.6		
-42	-43.6	-12	10.4	18	64.4	48	118.4		
-41	-41.8	-11	12.2	19	66.2	49	120.2		

GEN 2.7 SUNRISE / SUNSET TABLES

The times in the tables are given in UTC for beginning of civil morning twilight (BMCT), sunrise (SR), sunset (SS), and end of civil evening twilight (EECT). The tables include international airports.

The times given for the beginning of civil morning twilight and end of civil evening twilight are calculated for an altitude of the Sun 6° below the horizon, as commonly used.

The tables are calculated for the year 2023.

1. BANJA LUKA

BANJA LUKA - LQBK 445629.03N 0171750.91E											
MONTH	**DAY**	**BMCT**	**SR**	**SS**	**EECT**	**MONTH**	**DAY**	**BMCT**	**SR**	**SS**	**EECT**
JAN	1	0555	0629	1520	1554	**JUL**	1	0231	0308	1841	1918
	6	0556	0629	1525	1559		6	0235	0311	1840	1917
	11	0554	0627	1530	1603		11	0239	0315	1837	1913
	16	0552	0625	1536	1609		16	0243	0319	1834	1909
	21	0550	0622	1543	1615		21	0249	0324	1830	1906
	26	0545	0617	1550	1622		26	0254	0329	1825	1900
	31	0540	0612	1557	1629		31	0301	0335	1819	1852
FEB	1	0539	0611	1558	1629	**AUG**	1	0302	0336	1818	1852
	6	0534	0605	1605	1636		6	0308	0341	1811	1844
	11	0527	0558	1613	1644		11	0314	0347	1804	1836
	16	0521	0551	1620	1650		16	0321	0353	1756	1828
	21	0513	0543	1627	1657		21	0327	0359	1748	1819
	26	0506	0535	1634	1704		26	0334	0405	1740	1811
							31	0340	0411	1731	1801
MAR	1	0501	0530	1638	1708	**SEP**	1	0341	0412	1729	1800
	6	0452	0521	1644	1713		6	0348	0418	1720	1750
	11	0443	0512	1651	1720		11	0354	0424	1710	1739
	16	0433	0502	1658	1727		16	0400	0430	1701	1731
	21	0423	0453	1704	1734		21	0406	0436	1651	1720
	26	0415	0444	1710	1739		26	0412	0442	1642	1711
	31	0404	0434	1717	1747						
APR	1	0403	0433	1718	1748	**OCT**	1	0418	0448	1632	1701
	6	0353	0423	1724	1754		6	0425	0454	1623	1653
	11	0343	0414	1731	1801		11	0432	0501	1614	1644
	16	0334	0405	1737	1808		16	0437	0507	1605	1634
	21	0326	0357	1743	1814		21	0444	0514	1557	1627
	26	0318	0349	1749	1821		26	0450	0520	1549	1619
							31	0456	0527	1541	1611
MAY	1	0308	0341	1756	1828	**NOV**	1	0457	0528	1540	1611
	6	0301	0334	1802	1835		6	0504	0535	1533	1604
	11	0253	0327	1808	1842		11	0510	0542	1527	1559
	16	0247	0321	1814	1848		16	0517	0549	1522	1554
	21	0241	0316	1819	1854		21	0524	0556	1517	1549
	26	0237	0312	1824	1859		26	0529	0602	1514	1547
	31	0232	0308	1829	1906						
JUN	1	0232	0308	1830	1906	**DEC**	1	0535	0608	1511	1544
	6	0228	0305	1834	1911		6	0540	0613	1510	1544
	11	0226	0304	1837	1914		11	0544	0618	1509	1542
	16	0227	0304	1839	1916		16	0548	0622	1510	1543
	21	0226	0304	1841	1919		21	0552	0626	1512	1545
	26	0229	0306	1841	1918		26	0554	0628	1515	1549
							31	0556	0629	1519	1553

2. MOSTAR

MOSTAR - LQMO 431658.44N 0175045.16E											
MONTH	**DAY**	**BMCT**	**SR**	**SS**	**EECT**	**MONTH**	**DAY**	**BMCT**	**SR**	**SS**	**EECT**
JAN	1	0548	0621	1523	1555	**JUL**	1	0237	0312	1833	1909
	6	0548	0621	1528	1600		6	0240	0315	1831	1906
	11	0549	0620	1534	1606		11	0243	0318	1829	1904
	16	0547	0618	1539	1610		16	0249	0323	1826	1900
	21	0544	0615	1546	1617		21	0253	0327	1822	1856
	26	0541	0611	1552	1622		26	0259	0332	1818	1851
	31	0535	0606	1559	1630		31	0304	0337	1812	1844
FEB	1	0534	0605	1600	1630	**AUG**	1	0305	0338	1811	1843
	6	0529	0559	1607	1637		6	0311	0343	1805	1837
	11	0524	0553	1614	1644		11	0318	0349	1758	1829
	16	0516	0546	1620	1649		16	0323	0354	1751	1822
	21	0510	0539	1627	1656		21	0330	0400	1743	1813
	26	0502	0531	1633	1702		26	0335	0405	1735	1805
							31	0342	0411	1726	1755
MAR	1	0458	0526	1637	1705	**SEP**	1	0342	0412	1725	1754
	6	0448	0517	1643	1711		6	0349	0418	1716	1745
	11	0441	0509	1650	1718		11	0354	0423	1707	1736
	16	0432	0500	1656	1725		16	0400	0429	1658	1727
	21	0422	0451	1702	1731		21	0405	0434	1649	1718
	26	0413	0442	1708	1737		26	0412	0440	1640	1709
	31	0404	0433	1713	1742						
APR	1	0402	0431	1715	1744	**OCT**	1	0417	0445	1631	1700
	6	0354	0423	1720	1749		6	0422	0451	1622	1651
	11	0344	0414	1726	1755		11	0428	0457	1613	1641
	16	0336	0406	1732	1801		16	0434	0503	1605	1634
	21	0328	0358	1738	1808		21	0440	0509	1557	1626
	26	0320	0350	1744	1815		26	0446	0515	1549	1618
							31	0453	0522	1542	1611
MAY	1	0312	0343	1750	1821	**NOV**	1	0453	0523	1541	1611
	6	0305	0336	1755	1827		6	0500	0530	1534	1604
	11	0258	0330	1801	1833		11	0506	0536	1529	1600
	16	0251	0324	1806	1839		16	0511	0542	1524	1555
	21	0245	0319	1812	1846		21	0518	0549	1520	1551
	26	0241	0315	1816	1850		26	0524	0555	1517	1549
	31	0237	0312	1821	1856						
JUN	1	0236	0311	1822	1857	**DEC**	1	0528	0600	1514	1546
	6	0234	0309	1825	1900		6	0534	0606	1513	1545
	11	0232	0308	1828	1903		11	0537	0610	1513	1546
	16	0233	0308	1831	1907		16	0541	0614	1514	1547
	21	0232	0308	1832	1907		21	0544	0617	1516	1549
	26	0235	0310	1833	1909		26	0548	0620	1519	1552
							31	0549	0621	1522	1554

3. SARAJEVO

SARAJEVO - LQSA 434928.10N 0181954.36E											
MONTH	**DAY**	**BMCT**	**SR**	**SS**	**EECT**	**MONTH**	**DAY**	**BMCT**	**SR**	**SS**	**EECT**
JAN	1	0548	0621	1520	1553	**JUL**	1	0232	0308	1833	1909
	6	0549	0621	1525	1558		6	0235	0311	1831	1907
	11	0548	0620	1530	1603		11	0240	0315	1829	1904
	16	0546	0618	1536	1608		16	0245	0319	1826	1900
	21	0542	0614	1542	1613		21	0249	0323	1822	1856
	26	0539	0610	1549	1620		26	0254	0328	1817	1851
	31	0534	0605	1556	1627		31	0301	0334	1812	1845
FEB	1	0533	0604	1557	1628	**AUG**	1	0302	0335	1811	1844
	6	0529	0559	1604	1635		6	0307	0340	1804	1836
	11	0522	0552	1611	1641		11	0315	0346	1757	1829
	16	0515	0545	1617	1647		16	0320	0351	1750	1822
	21	0508	0537	1624	1653		21	0326	0357	1742	1812
	26	0500	0529	1631	1700		26	0333	0403	1734	1804
							31	0338	0408	1725	1754
MAR	1	0455	0524	1635	1704	**SEP**	1	0340	0410	1723	1753
	6	0448	0516	1641	1709		6	0345	0415	1714	1743
	11	0438	0507	1647	1716		11	0352	0421	1705	1734
	16	0429	0458	1654	1723		16	0357	0426	1656	1725
	21	0420	0449	1700	1729		21	0403	0432	1647	1716
	26	0411	0440	1706	1735		26	0410	0438	1638	1707
	31	0402	0431	1712	1741						
APR	1	0400	0429	1713	1742	**OCT**	1	0416	0444	1629	1658
	6	0350	0420	1719	1748		6	0421	0450	1620	1649
	11	0342	0412	1725	1754		11	0427	0456	1611	1640
	16	0333	0403	1731	1801		16	0433	0502	1602	1631
	21	0325	0355	1737	1807		21	0439	0508	1554	1623
	26	0316	0347	1743	1814		26	0444	0514	1546	1616
							31	0452	0521	1539	1609
MAY	1	0307	0339	1749	1821	**NOV**	1	0452	0522	1538	1608
	6	0301	0333	1755	1828		6	0459	0529	1531	1601
	11	0253	0326	1801	1834		11	0504	0535	1526	1557
	16	0248	0321	1806	1839		16	0511	0542	1521	1552
	21	0242	0316	1811	1845		21	0516	0548	1516	1547
	26	0238	0312	1816	1850		26	0522	0554	1513	1544
	31	0233	0308	1821	1856						
JUN	1	0233	0308	1822	1857	**DEC**	1	0528	0600	1511	1543
	6	0230	0306	1825	1901		6	0534	0606	1509	1542
	11	0228	0304	1829	1905		11	0537	0610	1509	1542
	16	0228	0304	1831	1908		16	0541	0614	1510	1543
	21	0228	0304	1832	1908		21	0544	0617	1512	1545
	26	0230	0306	1833	1909		26	0547	0620	1515	1548
							31	0548	0621	1519	1552

4. TUZLA

TUZLA - LQTZ 442731.15N 0184329.21E											
MONTH	**DAY**	**BMCT**	**SR**	**SS**	**EECT**	**MONTH**	**DAY**	**BMCT**	**SR**	**SS**	**EECT**
JAN	1	0549	0622	1516	1550	**JUL**	1	0227	0304	1834	1911
	6	0548	0621	1521	1554		6	0230	0307	1832	1908
	11	0547	0620	1526	1558		11	0235	0311	1830	1906
	16	0546	0618	1532	1604		16	0239	0315	1827	1903
	21	0543	0615	1539	1611		21	0246	0320	1823	1858
	26	0538	0610	1546	1617		26	0251	0325	1818	1852
	31	0534	0605	1552	1623		31	0256	0330	1812	1845
FEB	1	0533	0604	1554	1625	**AUG**	1	0258	0331	1811	1845
	6	0527	0558	1601	1632		6	0305	0337	1804	1837
	11	0522	0552	1608	1639		11	0311	0343	1757	1829
	16	0514	0544	1615	1645		16	0316	0348	1750	1822
	21	0508	0537	1622	1652		21	0323	0354	1742	1813
	26	0500	0529	1629	1658		26	0329	0400	1733	1803
							31	0336	0406	1724	1754
MAR	1	0454	0523	1633	1702	**SEP**	1	0337	0407	1723	1753
	6	0446	0515	1639	1708		6	0344	0413	1713	1743
	11	0437	0506	1646	1715		11	0350	0419	1704	1733
	16	0428	0457	1652	1721		16	0356	0425	1655	1725
	21	0418	0447	1658	1727		21	0401	0430	1645	1714
	26	0409	0438	1704	1733		26	0407	0436	1636	1705
	31	0359	0429	1711	1741						
APR	1	0357	0427	1712	1742	**OCT**	1	0413	0442	1627	1656
	6	0348	0418	1718	1747		6	0419	0448	1618	1647
	11	0339	0409	1724	1754		11	0426	0455	1609	1638
	16	0330	0400	1730	1800		16	0432	0501	1600	1629
	21	0321	0352	1737	1808		21	0437	0507	1552	1622
	26	0312	0344	1743	1815		26	0444	0514	1544	1614
							31	0450	0520	1536	1606
MAY	1	0304	0336	1749	1821	**NOV**	1	0452	0522	1535	1605
	6	0256	0329	1755	1828		6	0458	0529	1528	1559
	11	0250	0323	1801	1834		11	0504	0535	1522	1553
	16	0243	0317	1806	1840		16	0510	0542	1517	1548
	21	0237	0312	0812	1847		21	0517	0549	1513	1545
	26	0233	0308	1817	1852		26	0523	0555	1509	1541
	31	0228	0304	1821	1857						
JUN	1	0229	0304	1822	1858	**DEC**	1	0529	0601	1507	1539
	6	0226	0302	1826	1902		6	0533	0606	1506	1539
	11	0223	0300	1829	1905		11	0538	0611	1505	1538
	16	0224	0300	1832	1909		16	0542	0615	1506	1539
	21	0223	0300	1833	1910		21	0544	0618	1508	1541
	26	0225	0302	1834	1911		26	0546	0620	1511	1545
							31	0548	0621	1515	1549

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