

# Solar Interference for Spring 2021 - C-Band satellite services

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		<b>Last update:</b>	14:47:49 - 03/09/2021

## Symptom (public)

There will be brief mid-day service outages during the first few weeks of February and March 2021, due to solar interference.

Dear Talia customers,

This notice is to inform that there will be brief mid-day service outages during few weeks of February and March 2021, due to solar interference. This is a normal part of satellite operation and it cannot be avoided.

About solar interference

Twice each year, near the spring and fall equinoxes, the sun crosses the equatorial plane. At these times, the sun aligns directly behind geosynchronous satellites for a few minutes each day. When the sun moves directly behind the satellite relative to your receive antenna, the satellite signal can be overwhelmed by the enormous amount of radio frequency (RF) noise radiated by the sun. This can cause reception interference which briefly and temporarily degrades your satellite signal. You may experience several minutes of service interruption during this time.

## Problem (public)

There will be service outage between 5 to 10 minutes due to solar interference and the customers no need to touch their antennas

## Solution (public)

here will be no solution to that. Please see the tables below for expected times of interference; actual time at your location will vary. A technical explanation follows. We apologise for any inconvenience.

Note: All times are listed in local civil time with no adjustment for summer time.

ARABSAT-5A, 30.50E Standard antenna beamwidth at 4 GHz

Site 1

Raisting - Germany, 47.09N, 11.01E, EL=32.62, AZ=154.21, TZ=0.00, D=1.00

Date Begin Peak End Depth Closest(deg)

Feb 19 09:59 10:03 10:07 Low 4.12

Feb 20 09:55 10:03 10:11 Low 3.76

Feb 21 09:53 10:03 10:13 Low 3.40

Feb 22 09:51 10:03 10:15 Low 3.04

Feb 23 09:50 10:03 10:16 Low 2.67

Feb 24 09:48 10:03 10:17 Medium 2.30

Feb 25 09:47 10:03 10:18 Medium 1.93

Feb 26 09:47 10:02 10:18 High 1.56

Feb 27 09:46 10:02 10:18 High 1.18

Feb 28 09:45 10:02 10:19 High 0.81

Mar 1 09:45 10:02 10:19 High 0.43

Mar 2 09:45 10:02 10:19 High 0.06

Mar 3 09:44 10:01 10:18 High 0.34

Mar 4 09:44 10:01 10:18 High 0.72

Mar 5 09:45 10:01 10:17 High 1.11

Mar 6 09:45 10:01 10:17 High 1.49

Mar 7 09:45 10:00 10:16 Medium 1.88

Mar 8 09:46 10:00 10:14 Medium 2.27

Mar 9 09:47 10:00 10:13 Low 2.66

Mar 10 09:48 10:00 10:11 Low 3.05

Mar 11 09:50 09:59 10:09 Low 3.45

Mar 12 09:52 09:59 10:06 Low 3.84

Mar 13 09:57 09:59 10:01 Low 4.23

Site 2

Addis Ababa - Ethiopia, 8.98N, 38.75E, EL=75.69, AZ=222.89, TZ=3.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 12 13:09 13:14 13:18 Low 1.56

Mar 13 13:08 13:13 13:19 Medium 1.17

Mar 14 13:06 13:13 13:20 High 0.78

Mar 15 13:06 13:13 13:20 High 0.38

Mar 16 13:05 13:13 13:20 High 0.04

Mar 17 13:05 13:12 13:20 High 0.41

Mar 18 13:05 13:12 13:19 Medium 0.81

Mar 19 13:06 13:12 13:18 Low 1.20

Mar 20 13:07 13:11 13:16 Low 1.60

Site 3

Cotonou - Benin, 6.37N, 2.39E, EL=56.44, AZ=101.73, TZ=1.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 13 10:45 10:49 10:52 Low 1.66

Mar 14 10:43 10:48 10:54 Low 1.26

Mar 15 10:41 10:48 10:55 Medium 0.87

Mar 16 10:41 10:48 10:55 High 0.47

Mar 17 10:40 10:48 10:55 High 0.09

Mar 18 10:40 10:47 10:55 High 0.32

Mar 19 10:40 10:47 10:54 High 0.71

Mar 20 10:41 10:47 10:53 Medium 1.11

Mar 21 10:42 10:46 10:51 Low 1.50

Mar 22 10:45 10:46 10:47 Low 1.90

Site 4

Nouakchott - Mauritania, 18.09N, 15.97W, EL=33.68, AZ=106.43, TZ=1.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 8 10:39 10:42 10:45 Low 1.76

Mar 9 10:37 10:42 10:47 Low 1.37

Mar 10 10:35 10:42 10:48 Medium 0.98

Mar 11 10:34 10:41 10:49 High 0.59

Mar 12 10:34 10:41 10:49 High 0.19

Mar 13 10:33 10:41 10:48 High 0.20

Mar 14 10:34 10:41 10:48 High 0.60

Mar 15 10:34 10:40 10:47 Medium 0.99

Mar 16 10:35 10:40 10:45 Low 1.39

Mar 17 10:37 10:40 10:42 Low 1.78

Site 5

Algiers - Algeria, 36.50N, 3.00E, EL=38.71, AZ=138.81, TZ=0.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Feb 27 09:54 09:56 09:58 Low 2.43

Feb 28 09:51 09:56 10:01 Low 2.05

Mar 1 09:49 09:56 10:03 Low 1.67

Mar 2 09:47 09:56 10:04 Medium 1.29  
 Mar 3 09:46 09:55 10:04 High 0.91  
 Mar 4 09:46 09:55 10:05 High 0.53  
 Mar 5 09:45 09:55 10:05 High 0.14  
 Mar 6 09:45 09:55 10:04 High 0.25  
 Mar 7 09:45 09:54 10:04 High 0.64  
 Mar 8 09:45 09:54 10:03 Medium 1.03  
 Mar 9 09:46 09:54 10:02 Medium 1.42  
 Mar 10 09:47 09:54 10:00 Low 1.81  
 Mar 11 09:49 09:53 09:58 Low 2.20

Site 6

Lagos - Nigeria, 6.27N, 3.28E, EL=57.46, AZ=101.99, TZ=1.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 12 10:44 10:50 10:55 Low 2.07  
 Mar 13 10:42 10:49 10:57 Low 1.67  
 Mar 14 10:41 10:49 10:57 Medium 1.28  
 Mar 15 10:40 10:49 10:58 High 0.89  
 Mar 16 10:39 10:49 10:58 High 0.49  
 Mar 17 10:39 10:48 10:58 High 0.10  
 Mar 18 10:38 10:48 10:58 High 0.31  
 Mar 19 10:38 10:48 10:57 High 0.70  
 Mar 20 10:39 10:47 10:56 Medium 1.09  
 Mar 21 10:39 10:47 10:55 Medium 1.49  
 Mar 22 10:41 10:47 10:53 Low 1.88  
 Mar 23 10:43 10:47 10:50 Low 2.28

Site 7

Juba - South Sudan, 4.85N, 31.06E, EL=84.25, AZ=186.59, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 12 13:04 13:08 13:12 Low 2.29  
 Mar 13 13:02 13:08 13:14 Low 1.90  
 Mar 14 13:00 13:07 13:15 Low 1.50  
 Mar 15 12:59 13:07 13:16 Medium 1.11  
 Mar 16 12:58 13:07 13:16 High 0.71  
 Mar 17 12:57 13:07 13:16 High 0.32  
 Mar 18 12:57 13:06 13:16 High 0.08  
 Mar 19 12:57 13:06 13:16 High 0.48  
 Mar 20 12:57 13:06 13:15 High 0.87  
 Mar 21 12:57 13:05 13:14 Medium 1.26  
 Mar 22 12:58 13:05 13:12 Low 1.66  
 Mar 23 12:59 13:05 13:10 Low 2.05  
 Mar 24 13:03 13:05 13:06 Low 2.45

Site 8

Tripoli - Libya, 32.87N, 13.20E, EL=47.45, AZ=150.15, TZ=2.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 1 11:55 12:00 12:05 Low 2.09  
 Mar 2 11:53 12:00 12:07 Low 1.71  
 Mar 3 11:52 12:00 12:08 Medium 1.32  
 Mar 4 11:51 12:00 12:09 High 0.94  
 Mar 5 11:50 11:59 12:09 High 0.55  
 Mar 6 11:49 11:59 12:09 High 0.17  
 Mar 7 11:49 11:59 12:09 High 0.23

Mar 8 11:49 11:59 12:08 High 0.61

Mar 9 11:50 11:58 12:07 Medium 1.00

Mar 10 11:50 11:58 12:06 Medium 1.40

Mar 11 11:51 11:58 12:05 Low 1.79

Mar 12 11:53 11:58 12:02 Low 2.18

Site 9

Nairobi - Kenya, 1.28S, 36.83E, EL=82.40, AZ=281.39, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 15 13:07 13:11 13:16 Low 2.20

Mar 16 13:04 13:11 13:18 Low 1.80

Mar 17 13:03 13:11 13:19 Medium 1.41

Mar 18 13:02 13:10 13:19 Medium 1.01

Mar 19 13:01 13:10 13:20 High 0.61

Mar 20 13:00 13:10 13:20 High 0.22

Mar 21 13:00 13:10 13:19 High 0.18

Mar 22 13:00 13:09 13:19 High 0.57

Mar 23 13:00 13:09 13:18 High 0.97

Mar 24 13:01 13:09 13:17 Medium 1.36

Mar 25 13:02 13:08 13:15 Low 1.75

Mar 26 13:03 13:08 13:13 Low 2.14

Site 10

Johannesburg - South Africa, 26.20S, 28.03E, EL=59.26, AZ=5.58, TZ=2.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 25 12:01 12:02 12:04 Low 2.44

Mar 26 11:57 12:02 12:07 Low 2.05

Mar 27 11:55 12:02 12:09 Low 1.66

Mar 28 11:53 12:01 12:10 Medium 1.27

Mar 29 11:52 12:01 12:10 High 0.88

Mar 30 11:51 12:01 12:10 High 0.49

Mar 31 11:51 12:00 12:10 High 0.12

Apr 1 11:51 12:00 12:10 High 0.28

Apr 2 11:51 12:00 12:09 High 0.66

Apr 3 11:51 12:00 12:08 Medium 1.05

Apr 4 11:51 11:59 12:07 Medium 1.43

Apr 5 11:52 11:59 12:06 Low 1.81

Apr 6 11:54 11:59 12:03 Low 2.19

Site 11

Baghdad - Iraq, 33.33N, 44.43E, EL=48.44, AZ=204.29, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Feb 28 13:16 13:19 13:21 Low 2.39

Mar 1 13:13 13:18 13:24 Low 2.01

Mar 2 13:11 13:18 13:25 Low 1.63

Mar 3 13:10 13:18 13:26 Medium 1.24

Mar 4 13:09 13:18 13:27 High 0.86

Mar 5 13:08 13:17 13:27 High 0.48

Mar 6 13:08 13:17 13:27 High 0.08

Mar 7 13:07 13:17 13:27 High 0.31

Mar 8 13:07 13:17 13:26 High 0.69

Mar 9 13:08 13:17 13:25 Medium 1.09

Mar 10 13:09 13:16 13:24 Medium 1.48

Mar 11 13:10 13:16 13:22 Low 1.87

Mar 12 13:12 13:16 13:20 Low 2.26

Site 12

Kinshasa - DR Congo, 4.33S, 15.31E, EL=71.47, AZ=74.45, TZ=1.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 16 10:53 10:56 10:59 Low 2.34

Mar 17 10:50 10:56 11:01 Low 1.95

Mar 18 10:48 10:55 11:03 Low 1.55

Mar 19 10:46 10:55 11:03 Medium 1.16

Mar 20 10:45 10:55 11:04 High 0.76

Mar 21 10:45 10:54 11:04 High 0.37

Mar 22 10:44 10:54 11:04 High 0.05

Mar 23 10:44 10:54 11:03 High 0.42

Mar 24 10:44 10:53 11:03 High 0.82

Mar 25 10:45 10:53 11:02 Medium 1.21

Mar 26 10:46 10:53 11:00 Low 1.60

Mar 27 10:47 10:53 10:58 Low 1.99

Mar 28 10:50 10:52 10:55 Low 2.38

Site 13

Lubumbashi - DR Congo, 11.66S, 27.47E, EL=75.84, AZ=14.66, TZ=2.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 19 12:02 12:04 12:05 Low 2.44

Mar 20 11:58 12:03 12:09 Low 2.05

Mar 21 11:56 12:03 12:10 Low 1.65

Mar 22 11:54 12:03 12:11 Medium 1.26

Mar 23 11:53 12:02 12:11 High 0.87

Mar 24 11:53 12:02 12:12 High 0.48

Mar 25 11:52 12:02 12:11 High 0.08

Mar 26 11:52 12:01 12:11 High 0.32

Mar 27 11:52 12:01 12:10 High 0.71

Mar 28 11:52 12:01 12:09 Medium 1.09

Mar 29 11:53 12:01 12:08 Medium 1.49

Mar 30 11:54 12:00 12:06 Low 1.87

Mar 31 11:56 12:00 12:04 Low 2.26

Site 14

Somalia - Garoowe, 8.40N, 48.48E, EL=66.80, AZ=245.77, TZ=4.50, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 12 14:46 14:50 14:53 Low 1.67

Mar 13 14:44 14:50 14:55 Low 1.28

Mar 14 14:43 14:49 14:56 Medium 0.89

Mar 15 14:42 14:49 14:56 High 0.49

Mar 16 14:41 14:49 14:56 High 0.10

Mar 17 14:41 14:48 14:56 High 0.30

Mar 18 14:41 14:48 14:55 High 0.69

Mar 19 14:42 14:48 14:54 Medium 1.09

Mar 20 14:43 14:48 14:52 Low 1.49

Mar 21 14:46 14:47 14:49 Low 1.88

Site 15

Kabul - Afghanistan, 34.50N, 69.17E, EL=32.75, AZ=234.71, TZ=4.50, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 2 14:56 15:00 15:04 Low 1.63

Mar 3 14:54 15:00 15:05 Low 1.25  
 Mar 4 14:53 15:00 15:06 Medium 0.86  
 Mar 5 14:52 14:59 15:07 High 0.47  
 Mar 6 14:52 14:59 15:07 High 0.10  
 Mar 7 14:51 14:59 15:06 High 0.30  
 Mar 8 14:52 14:59 15:06 High 0.69  
 Mar 9 14:52 14:58 15:04 Medium 1.08  
 Mar 10 14:53 14:58 15:03 Low 1.47  
 Mar 11 14:56 14:58 14:59 Low 1.87

BADR-6, 26.0E Standard antenna beamwidth at 4 GHz

Site 1

Raisting - Germany, 47.09N, 11.01E, EL=33.93, AZ=159.92, TZ=0.00, D=1.00

Date Begin Peak End Depth Closest(deg)

Feb 19 10:19 10:23 10:27 Low 4.10  
 Feb 20 10:15 10:23 10:31 Low 3.74  
 Feb 21 10:13 10:23 10:33 Low 3.38  
 Feb 22 10:11 10:23 10:35 Low 3.01  
 Feb 23 10:09 10:23 10:36 Low 2.65  
 Feb 24 10:08 10:22 10:37 Medium 2.28  
 Feb 25 10:07 10:22 10:37 Medium 1.91  
 Feb 26 10:06 10:22 10:38 High 1.53  
 Feb 27 10:06 10:22 10:38 High 1.16  
 Feb 28 10:05 10:22 10:38 High 0.78  
 Mar 1 10:05 10:21 10:38 High 0.41  
 Mar 2 10:04 10:21 10:38 High 0.02  
 Mar 3 10:04 10:21 10:38 High 0.37  
 Mar 4 10:04 10:21 10:37 High 0.75  
 Mar 5 10:04 10:21 10:37 High 1.13  
 Mar 6 10:05 10:20 10:36 High 1.52  
 Mar 7 10:05 10:20 10:35 Medium 1.91  
 Mar 8 10:06 10:20 10:34 Medium 2.30  
 Mar 9 10:07 10:20 10:33 Low 2.69  
 Mar 10 10:08 10:19 10:31 Low 3.08  
 Mar 11 10:09 10:19 10:29 Low 3.47  
 Mar 12 10:12 10:19 10:26 Low 3.87  
 Mar 13 10:18 10:19 10:19 Low 4.26

Site 2

Ethiopia - Addis Ababa, 8.98N, 38.75E, EL=71.73, AZ=235.40, TZ=3.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 12 13:30 13:34 13:39 Low 1.56  
 Mar 13 13:28 13:34 13:40 Medium 1.17  
 Mar 14 13:27 13:34 13:41 High 0.78  
 Mar 15 13:26 13:34 13:41 High 0.38  
 Mar 16 13:26 13:33 13:41 High 0.03  
 Mar 17 13:26 13:33 13:40 High 0.41  
 Mar 18 13:26 13:33 13:40 Medium 0.81  
 Mar 19 13:27 13:32 13:38 Low 1.20  
 Mar 20 13:28 13:32 13:36 Low 1.60

Site 3

Gambia - Banjul, 13.47N, 16.47W, EL=39.10, AZ=104.28, TZ=0.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 10 09:57 10:01 10:04 Low 1.69  
 Mar 11 09:55 10:01 10:06 Low 1.30  
 Mar 12 09:54 10:00 10:07 Medium 0.90  
 Mar 13 09:53 10:00 10:07 High 0.51  
 Mar 14 09:52 10:00 10:07 High 0.12  
 Mar 15 09:52 10:00 10:07 High 0.28  
 Mar 16 09:52 09:59 10:06 High 0.68  
 Mar 17 09:53 09:59 10:05 Medium 1.07  
 Mar 18 09:54 09:59 10:03 Low 1.47  
 Mar 19 09:57 09:58 10:00 Low 1.86

Site 4

Baghdad - Iraq, 33.33N, 44.43E, EL=46.46, AZ=211.24, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Feb 28 13:37 13:39 13:41 Low 2.40  
 Mar 1 13:33 13:39 13:44 Low 2.02  
 Mar 2 13:31 13:38 13:46 Low 1.64  
 Mar 3 13:30 13:38 13:47 Medium 1.26  
 Mar 4 13:29 13:38 13:47 High 0.87  
 Mar 5 13:28 13:38 13:47 High 0.49  
 Mar 6 13:28 13:38 13:47 High 0.11  
 Mar 7 13:28 13:37 13:47 High 0.29  
 Mar 8 13:28 13:37 13:46 High 0.68  
 Mar 9 13:28 13:37 13:46 Medium 1.07  
 Mar 10 13:29 13:37 13:44 Medium 1.46  
 Mar 11 13:30 13:36 13:43 Low 1.86  
 Mar 12 13:32 13:36 13:40 Low 2.25

YAHSAT-1A, 52.5E Standard antenna beamwidth at 4 GHz

Site 1

Raisting - Germany, 47.09N, 11.01E, EL=22.67, AZ=129.63, TZ=0.00, D=1.00

Date Begin Peak End Depth Closest(deg)

Feb 20 08:21 08:27 08:33 Low 3.95  
 Feb 21 08:18 08:27 08:36 Low 3.59  
 Feb 22 08:16 08:27 08:38 Low 3.22  
 Feb 23 08:14 08:27 08:39 Low 2.86  
 Feb 24 08:13 08:26 08:40 Low 2.49  
 Feb 25 08:12 08:26 08:41 Medium 2.12  
 Feb 26 08:11 08:26 08:42 Medium 1.75  
 Feb 27 08:10 08:26 08:42 High 1.37  
 Feb 28 08:09 08:26 08:42 High 1.00  
 Mar 1 08:09 08:26 08:42 High 0.62  
 Mar 2 08:08 08:25 08:42 High 0.24  
 Mar 3 08:08 08:25 08:42 High 0.15  
 Mar 4 08:08 08:25 08:42 High 0.53  
 Mar 5 08:08 08:25 08:41 High 0.92  
 Mar 6 08:08 08:24 08:41 High 1.30  
 Mar 7 08:09 08:24 08:40 Medium 1.69  
 Mar 8 08:09 08:24 08:39 Medium 2.08  
 Mar 9 08:10 08:24 08:37 Low 2.47  
 Mar 10 08:11 08:23 08:36 Low 2.86  
 Mar 11 08:12 08:23 08:34 Low 3.26  
 Mar 12 08:14 08:23 08:32 Low 3.65

Mar 13 08:17 08:23 08:28 Low 4.04

Site 2

Addis Ababa - Ethiopia, 8.98N, 38.75E, EL=70.77, AZ=122.53, TZ=3.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 12 11:26 11:30 11:34 Low 1.60

Mar 13 11:24 11:30 11:36 Low 1.21

Mar 14 11:23 11:30 11:37 Medium 0.81

Mar 15 11:22 11:30 11:37 High 0.42

Mar 16 11:22 11:29 11:37 High 0.02

Mar 17 11:22 11:29 11:36 High 0.38

Mar 18 11:22 11:29 11:35 High 0.77

Mar 19 11:22 11:28 11:34 Medium 1.17

Mar 20 11:24 11:28 11:32 Low 1.56

Site 3

Cotonou - Benin, 6.37N, 2.39E, EL=32.26, AZ=95.30, TZ=1.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 13 09:07 09:10 09:13 Low 1.73

Mar 14 09:05 09:10 09:15 Low 1.34

Mar 15 09:03 09:10 09:16 Medium 0.95

Mar 16 09:02 09:09 09:17 High 0.55

Mar 17 09:02 09:09 09:17 High 0.16

Mar 18 09:01 09:09 09:16 High 0.24

Mar 19 09:01 09:09 09:16 High 0.64

Mar 20 09:02 09:08 09:15 Medium 1.03

Mar 21 09:03 09:08 09:13 Low 1.43

Mar 22 09:05 09:08 09:10 Low 1.82

Site 4

Nouakchott - Mauritania, 18.09N, 15.97W, EL=11.98, AZ=96.98, TZ=1.00, D=2.40

Date Begin Peak End Depth Closest(deg)

Mar 9 09:04 09:08 09:13 Low 1.55

Mar 10 09:02 09:08 09:14 Medium 1.16

Mar 11 09:01 09:08 09:15 High 0.77

Mar 12 09:00 09:08 09:15 High 0.37

Mar 13 09:00 09:07 09:15 High 0.05

Mar 14 09:00 09:07 09:14 High 0.41

Mar 15 09:00 09:07 09:14 Medium 0.81

Mar 16 09:01 09:07 09:12 Low 1.20

Mar 17 09:02 09:06 09:10 Low 1.60

Site 5

Algiers - Algeria, 36.50N, 3.00E, EL=23.52, AZ=116.93, TZ=0.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Feb 28 08:16 08:19 08:23 Low 2.27

Mar 1 08:13 08:19 08:25 Low 1.89

Mar 2 08:11 08:19 08:27 Low 1.51

Mar 3 08:10 08:19 08:27 Medium 1.13

Mar 4 08:09 08:19 08:28 High 0.75

Mar 5 08:09 08:18 08:28 High 0.36

Mar 6 08:08 08:18 08:28 High 0.05

Mar 7 08:08 08:18 08:27 High 0.42

Mar 8 08:08 08:18 08:27 High 0.81



Mar 9 08:09 08:17 08:26 Medium 1.20

Mar 10 08:10 08:17 08:25 Low 1.59

Mar 11 08:11 08:17 08:23 Low 1.98

Mar 12 08:14 08:17 08:19 Low 2.37

Site 6

Lagos - Nigeria, 6.27N, 3.28E, EL=33.23, AZ=95.38, TZ=1.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 12 09:06 09:11 09:16 Low 2.14

Mar 13 09:04 09:11 09:18 Low 1.75

Mar 14 09:02 09:10 09:19 Medium 1.36

Mar 15 09:01 09:10 09:19 High 0.96

Mar 16 09:00 09:10 09:19 High 0.57

Mar 17 09:00 09:10 09:19 High 0.17

Mar 18 09:00 09:09 09:19 High 0.23

Mar 19 09:00 09:09 09:18 High 0.62

Mar 20 09:00 09:09 09:18 Medium 1.02

Mar 21 09:01 09:08 09:16 Medium 1.41

Mar 22 09:02 09:08 09:15 Low 1.81

Mar 23 09:03 09:08 09:12 Low 2.20

Site 7

Juba - South Sudan, 4.85N, 31.06E, EL=64.28, AZ=102.15, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 12 11:22 11:25 11:28 Low 2.33

Mar 13 11:19 11:25 11:31 Low 1.94

Mar 14 11:17 11:24 11:32 Low 1.54

Mar 15 11:15 11:24 11:33 Medium 1.15

Mar 16 11:14 11:24 11:33 High 0.75

Mar 17 11:14 11:23 11:33 High 0.36

Mar 18 11:13 11:23 11:33 High 0.05

Mar 19 11:13 11:23 11:32 High 0.43

Mar 20 11:13 11:23 11:32 High 0.83

Mar 21 11:14 11:22 11:31 Medium 1.22

Mar 22 11:15 11:22 11:29 Low 1.62

Mar 23 11:16 11:22 11:27 Low 2.01

Mar 24 11:19 11:21 11:24 Low 2.41

Site 8

Tripoli - Libya, 32.87N, 13.20E, EL=33.29, AZ=123.55, TZ=2.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 1 10:18 10:22 10:25 Low 2.26

Mar 2 10:15 10:21 10:28 Low 1.88

Mar 3 10:14 10:21 10:29 Low 1.50

Mar 4 10:12 10:21 10:30 Medium 1.12

Mar 5 10:11 10:21 10:30 High 0.73

Mar 6 10:11 10:21 10:30 High 0.35

Mar 7 10:11 10:20 10:30 High 0.05

Mar 8 10:11 10:20 10:30 High 0.44

Mar 9 10:11 10:20 10:29 High 0.83

Mar 10 10:11 10:20 10:28 Medium 1.22

Mar 11 10:12 10:19 10:27 Low 1.61

Mar 12 10:13 10:19 10:25 Low 2.00

Mar 13 10:16 10:19 10:21 Low 2.40

Site 9

Nairobi - Kenya, 1.28S, 36.83E, EL=71.54, AZ=85.45, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 15 11:24 11:28 11:32 Low 2.22  
 Mar 16 11:21 11:27 11:34 Low 1.83  
 Mar 17 11:19 11:27 11:35 Medium 1.43  
 Mar 18 11:18 11:27 11:36 Medium 1.04  
 Mar 19 11:17 11:27 11:36 High 0.64  
 Mar 20 11:17 11:26 11:36 High 0.25  
 Mar 21 11:16 11:26 11:36 High 0.16  
 Mar 22 11:16 11:26 11:35 High 0.54  
 Mar 23 11:16 11:25 11:34 High 0.94  
 Mar 24 11:17 11:25 11:33 Medium 1.33  
 Mar 25 11:18 11:25 11:32 Low 1.72  
 Mar 26 11:20 11:25 11:29 Low 2.12

Site 10

Johannesburg - South Africa, 26.20S, 28.03E, EL=49.07, AZ=45.87, TZ=2.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Mar 25 10:19 10:21 10:23 Low 2.40  
 Mar 26 10:15 10:21 10:26 Low 2.01  
 Mar 27 10:13 10:20 10:28 Low 1.62  
 Mar 28 10:12 10:20 10:29 Medium 1.23  
 Mar 29 10:11 10:20 10:29 High 0.84  
 Mar 30 10:10 10:19 10:29 High 0.46  
 Mar 31 10:09 10:19 10:29 High 0.07  
 Apr 1 10:09 10:19 10:29 High 0.32  
 Apr 2 10:09 10:19 10:28 High 0.71  
 Apr 3 10:10 10:18 10:27 Medium 1.09  
 Apr 4 10:10 10:18 10:26 Medium 1.47  
 Apr 5 10:11 10:18 10:24 Low 1.85  
 Apr 6 10:13 10:17 10:22 Low 2.23

Site 11

Baghdad - Iraq, 33.33N, 44.43E, EL=50.28, AZ=165.53, TZ=3.00, D=1.80

Date Begin Peak End Depth Closest(deg)

Feb 28 11:35 11:38 11:40 Low 2.40  
 Mar 1 11:32 11:38 11:43 Low 2.02  
 Mar 2 11:30 11:37 11:45 Low 1.64  
 Mar 3 11:29 11:37 11:46 Medium 1.25  
 Mar 4 11:28 11:37 11:46 High 0.87  
 Mar 5 11:27 11:37 11:46 High 0.48  
 Mar 6 11:27 11:37 11:46 High 0.10  
 Mar 7 11:27 11:36 11:46 High 0.29  
 Mar 8 11:27 11:36 11:45 High 0.68

Mar