



Long Path



Volume 23 Issue 4

SEMDXA NEWSLETTER

January, 2006



Greeting Fellow DXers,

Well the antenna raising season is over and now it is time to find a nice warm place and snuggle with a copy of QST or CQ and dream of next years antenna projects. Oh, and did I mention work a few new ones on Top Band ? I spent hours listening to the noise as propagation is all but non existent. Don, **K8BB** operated from the QTH of **W8MJ** during the ARRL 160 Contest and ran up an excellent score, 244,815 points (1236 Qs and a 95 multiplier) Congratulations Don!

I haven't heard how Hank, Stan and Ian did but we can all hear that at the meeting on January 14th. I worked them on every band with the exception of 10 meters and some of the other members I spoke with helped them out some too. Hope you guys did well and I am looking forward to the presentation of **FP/K8DD**.

Our last meeting was on LOTW and was done by Fred, **W1SKU** and I would like to thank him for the impromptu presentation. Sean had some family problems and Fred offered to fill literally on the day of the meeting and did a fine job. I must say it certainly is good to have a club full of members that are willing and able to pitch in when we're in a pinch. I hope

the information given prompted some of you to give LOTW a chance as it is indeed a great DXers utility. Jump in, get your feet wet, and I assure you you'll enjoy it.

Don't forget next month is the 3Y0X DX-pedition for those of you that need it. If nothing else it's a good excuse to fire up the amp and put some heat in the room.

Before I close I'd also like to thank Gerry for the job he does on the newsletter. It is a time consuming job but one that is MUCH appreciated. If it were not for his devotion you would not be reading the newsletter today. Thanks a bunch Gerry and I hope you and all the rest of the members have a very Merry Christmas. BTW if that last sentence is not politically correct, fire me.

Take care gang and see you at the meeting next month.

K8SIX, President

November Minutes

Called to order by President **K8SIX**, at 7:40 p.m. Twenty-six members and guests present.

Treasurer's Report: Brad, **N8SNM**, says we have \$448.50 in the treasury. Six members paid tonight for an additional \$120.00. Please note! The address printed in last month's *Long Path* is incorrect. Look up his correct address on QRZ.com.

October minutes as printed in the *Long Path*. I

AC8W, had no other correspondence.

K8NA had no other news to report.

K8DD, gave a "Buck" report. Seems **N8CQA** is an impatient patient. He is doing well. A crew erected an all band dipole and he is using his Pegasus to get on the air. He can go down stairs to the basement OK, but needs both hands on the railing to go up. Things are looking up.

KC8OBH, related that there was an accident on Telegraph Road last week

SEMDXA CLUB OFFICERS

President: Al Bailey, **K8SIX**

Vice-president: Ken Schang, **W8LU**

Treasurer: Brad Nowak, **N8SNM**

Secretary: Stan Arnett, **AC8W**

Director: Ted Pauck, **K8NA**

Web Site Editor: Ken Schang, **W8LU**

DXCC Checker: Bill Jones, **N8KF**

DXCC Checker: S.Arnett, **AC8W**

VUCC Checker: Al Bailey, **K8SIX**

CQ Checker: Mike Rudzki, **N8MR**

CQ Checker: Al Bailey, **K8SIX**

Program Chair: Sean Fleming, **K8KHZ**

LP Publisher: Gerry Fasse, **W8GF**

where a lady was driving south in the north bound lane and hit a car head on. **K8KGW**, was the driver of the car that was hit and he is in the hospital and faces a long recovery. We wish him the best.

AC8W, reminded members that he and **K8DD** and **K8MM** plus three others will be flying to FP, St. Pierre & Miquelon on the 20th of this month. Look for them after the 21st and especially during the CQWW CW contest. Will use **FP/K8DD** during the test. QSL as directed by the operator or to **K8NA** our trusty QSL manager.

The program for this evening is an explanation of Logbook of the World (LOTW) given by **W1SKU**, who filled in at the last minute for **K8KHZ**. This ARRL project helps save on QSL and postage costs and on of the biggest benefits, in Fred's estimation, is complete and total access to your DXCC records.

Fred went step-by-step through the process of obtaining a certificate, uploading logs receiving credit for awards using screen shots of the actual pages.

Lots of questions were asked. A very informative program. Thanks Fred.

President Al wished everyone Happy Holidays and reminds us that there is no December meeting. See you in January, 2006!

Meeting adjourned to enjoy camaraderie at 9:05 p.m.

AC8W, Secretary

W6XM (SK)

Well-known Amateur Radio author Edmund H. "Ed" Marriner, **W6XM** (ex-**W6BLZ**), of San Luis Obispo,

California, died November 20. He was 90. A prolific writer, he contributed to various Amateur Radio publications, including QST, CQ, Ham Radio and 73, from the 1950s until the 1990s. Marriner edited the "Ham Notebook" column in Ham Radio for several years and authored dozens of construction project articles for CQ. He also wrote about linear amplifiers and the advent of SSB. Earlier this year, Marriner--an ARRL member--was inducted into the CQ Amateur Radio Hall of Fame.

NEW POSTAL RATES

Effective January 8, 2006, US Postage rates are to increase as indicated below.

	Old	New
First Class Letter (1 oz)	0.37¢	0.39¢
First Class Letter (2 oz)	0.60¢	0.63¢
International Air Mail	0.80¢	0.84¢
Post Cards (QSLs)	0.23¢	0.24¢
Priority Mail (1b)	\$3.85	\$4.05
Express Mail (1/2 oz)	\$13.65	\$13.6
Express Mail (2 lb)	\$17.85	\$18.80
Certified Mail	\$2.30	\$2.40
Delivery Confirmation	0.45¢	0.50¢
Return Receipt	\$1.75	\$1.85
Money Orders (\$500.00)	0.90¢	0.95¢

To insure a steady flow of cards through your ARRL QSL bureau, you should send some additional postage to your QSL Manager, preferably 2 cent stamps. This also applies to any other QSL Manager you may have outstanding cards with.

SEMDXA MEMBERSHIP

Our roster presently indicates 58 paid-up members. Our perpetual roster contains 235 call signs. Known silent keys (SK) total 14 (**KB8IO**, **KC8OB**, **KM8Y**, **N8EOA**, **N8FGH**, **NG8S**, **W8BXM**, **W8KPL**, **W8KZM**, **W8LZV**, **W8QFR**, **W8URM**, **WB8OHO** and **WD8CRY**).

DX PROSPECTS

Winter-time conditions are quite evident if you tune any of our DXing spectrum. Forty Meters is open nearly around the clock to Europe and the near East. The other morning **G3SED** was banging in around noon local time here. **GU4YOX** likewise. Eighty Meters is opening well before out sunset - sometimes as early as 3:00PM local time.

The late November **8Q7DV** operation was amazing. Their Forty Meter signals were S9 at 1:30 PM local time. They were easy pickins even on 80 Meters. On November 28 they were S9 at 4:30 PM local time! Two definite peaks were noted; around our sunset and later, their sunrise. The earlier opening had the best signals with little QSB. Considerable QSB was noted at their sunrise.

Although they were frequently active on 160 Meters, no detectable signals were evident at your Editors QTH.

Looking over the **8Q7DV** website revealed an awesome antenna system for the low bands. Their low frequency antennas are mounted right on the ocean, several yards off the beaches of Sun Island! This is a group of amateurs that are not only dedicated but know their stuff as well! QSL via **UA9CLB**. Your Editor recommends using Russian stamps on your return envelope. This has been proven to be the most effective method of getting that precious pasteboard in you hands in a timely way.

Several other operations are in the works. The most notable is the planned operation at **XU7ACY** by low-band specialist **NO2R**. Mostly CW with emphasis on 160, 80 and 40 Meters. Look for activity to begin in early January. QSL via **K2NJ**.

THE OTHER LONG PATH

As noted previously, The North Alabama DX Club newsletter bears the same name as ours, The Long Path.. What follows is a piece authored by Tom Russell, N4KG which will appear in their next issue. Tom was born and raised on Detroit's Eastside and previously held the call signs W8FAW and WA0SDC. With Tom's permission, the following is printed here.

W8GF

ARRL 160 METER CONTEST

The ARRL 160 Meter Contest is a blend of the ARRL Sweepstakes and DX Contests. I tend to think of it as the 160M Sweepstakes with a little DX thrown in. DX stations are only allowed to contact USA and Canadian stations in this contest. Entrants are asked to observe the DX Window from 1830 to 1835 KHz. This event takes place the first full weekend of December from 2200 GMT Friday to 1600 GMT Sunday for a total operating period of 42 hours.

Personally, I think a "one night stand" would suffice but two nights provides more access to DX and insurance in case one night has poor propagation or high noise levels. Two categories are permitted, either Single Operator (NO assistance) or Multi-Operator Single Transmitter which includes Single Operators who chose to use Packet Assistance.

These categories are then separated by power levels, QRP ($\leq 5W$), Low Power ($\leq 150W$), High Power ($>150W$). Score = QSO points X Multipliers. Contacts in the USA and Canada are 2 credited with 2 points each while DX contacts are credited with 5 points each. Multipliers include the 80 ARRL Sections (VE8,

VY1, VY0 are counted as the same section) plus DXCC countries outside W/VE.

This year's event was characterized by fairly good conditions Friday night. Saturday night suffered from weaker signals and higher noise levels due to widespread thunderstorms. In a casual Low Power 10-hour effort, N4KG worked 330 stations in 74 sections including all 48 continental states plus 8 Countries, mostly by Search and Pounce style operating. KH6TM and NL7Z were heard for several hours each with poor to fair signals but the steady stream of high power stations calling precluded making contact for the last two states.

Other missed sections were San Diego, San Francisco, and Orange, all in California, along with Manitoba (VE4), which were never heard. A few sections were worked only by CQing, namely West Mass., Louisiana, North Dakota, and VY0, none of which were heard CQing on their own.

DX stations worked include 6Y0A, CO8LY, PJ5NA, VP2E, P40TA, DJ3TF, F5IN, OK1RF, and ON4UN. All of the DX stations were worked using 100 Watts to a simple 140 ft Inverted L antenna supported by a rope over a tree limb (at 80 ft.) and fed against 50 radials 70 to 100 ft long. The western states were worked using a full size Elevated GP antenna consisting of 140 ft of Rohn 25 tower and 6 radials attached 15 ft above ground. I use two antennas because an intervening 130- foot tall tower with beam acts as a parasitic reflector creating patterns to the East and NW.

N4NO made 670 contacts including 12 DX contacts in CO, DL, F, KP4, LA, LZ, OK, OM, PJ and XE. He used no more than 1000 Watts to a shunt fed tower with several short radials cut to fit in his backyard. Neither of us used any special receiving antennas during this contest. Many of the serious entrants made over 1400 contacts in 78 to 80 sec-

tions and up to 53 DX Countries.

Propagation on 160 Meters can be very unpredictable, but it is surprising what can be worked under the right conditions on this band that sits just above the AM Broadcast Band. Only a few commercial antennas are available for this band, but home-made antennas can be constructed fairly easily. Examples include a simple inverted L wire antenna fed against a ground rod, an inverted Vee Dipole, shunt feeding an existing tower, or the N4KG Reverse Fed Elevated Ground Plane Antenna. See any ARRL Handbook or ARRL Antenna Book for details. 160 Meters offers an interesting challenge.

TRY IT, You just may LIKE IT ! The CQ World Wide 160 Meter Contest is coming up the last full weekend in January for CW, and the last full weekend in February for SSB.

N4KG (ex W8FAW, WA0SDC)

Peter I

The Peter I DX-pedition is slated to take place in the last weeks of January through early February. This event - twice postponed- will create intense activity on our amateur bands because Peter I ranks high atop the most wanted list of DXCC Entities (number six in most surveys your Editor has seen).

Included with this issue of the *Long Path* is a W6EL propagation forecast for Peter I centered on January 28, 2006. A solar flux value of 80 and a K Index value of 2 were used for these predictions. With solar cycle 23 in it's waning period, it is difficult -near impossible actually- to arrive at an exact solar flux value during the DX-pedition period. A range of values is more easily staged. It is likely that solar flux will be in the range of 75 to

and based on recent solar storm activity, the K Index will likely be in the 0 to 3 range.

The **W6EL** program can be downloaded from the Internet free of charge. Use Google or any of the other search engines and merely type in **W6EL**. This propagation forecast program is highly rated and worth keeping handy!

W8GF

Foreign Postage

Bill Plum (actually William J. Plum) ran a small foreign postage business dedicated to Amateur Radio QSLing for many years. QSLing using postage from the target DXCC entity has been, and will likely be in the future, the best method of prying that needed card from that rare DX station. Log Book of The World might be effective for obtaining DXCC and WAS credit but nothing beats receiving that precious pasteboard!

Unfortunately, Mr. Plum no longer provides this service. The reason why is unknown to your Editor. If Mr. Plum ever held an Amateur Radio license remains a mystery too. Mr. Plum, in addition to postage also provided mailing envelopes and related accessories including eyeball cards and rubber stamps. Looking through his mailing from a few years back it was noted that one of our current club members had his eyeball card in the samples included. (**K8ESQ**).

To the rescue comes James E. Mackey, **K3FN**. provides a similar service such as:

- **International Postage Stamps
- **Rubber Stamps
- **Envelope Mailing Systems

His website provides a list of foreign postage rates from nearly every country of the world. A nominal service charge of \$2.00 per postage order is presently in effect. You may do business over the Internet or via US Mail. You can reach him via e-Mail at **K3FN@aol.com**.

Mailing Address:

James E. Mackey
Post Office Box 270569
West Hartford, CT 06127-0569

Website: **HTTP://USERS.NET/IPLUS.COM/RYOUING**

Your Editor has used both Plum and Mackey's services with excellent results.

Christmas Holiday Season

By the time you read this issue of the **Long Path**, our 2005 holiday season will be history. Hopefully you and yours enjoyed this most pleasant time of the year.

The Officers of **SEMDXA** wish you the very best in 2006. With cycle 23 nearing the end and cycle 24 looming, make the best of radio propagation by using the low bands (40, 80 and 160) which are providing extraordinary DX these days of a spotless Sun!

Receiving Antennas

Your Editor recently installed a **K9AY** low-band receiving antenna. After experimenting with many, many dedicated receiving antennas over a period of 40 years, I was hoping that this antenna system would finally be the ne-plus-ultra. Previous antennas experiments included horizontal loops, vertical loops, Ewes, Pennants and even Snakes. Results were, in general, a major disappoint-

ment. The horizontal loop was probably the best of the lot with the Pennant a close second.

The Horizontal loop was the quietest but the Pennant provided the best directivity. However, rotating the Pennant took considerable time which reduced its effectiveness considerably. Enter the **K9AY** Antenna.

The **K9AY** receiving antenna is definitely the best of the lot! It displays excellent directivity and noise rejection. Four direction switching is accomplished instantly right at your stations desk. Several bonus features were hardly expected but resulted during testing. The kit is not cheap costing about \$380.00. A little elbow grease however can save a lot of this expense. You may look at this design as it appears in the September issue of QST, 1997 (page 43).

A complete report on this antenna will appear in the Long Path in the near future.

W8GF



Paid up *SEMDXA* members in alphabetical order:

<u>CALL SIGN</u>	<u>E-MAIL</u>	<u>CALL SIGN</u>	<u>E-MAIL</u>
AC8W	AC8W@ARRL.NET	N8CQA	N8CQA@ARRL.NET
AD4UU	AD4VU@COMCAST.NET	N8HZM	MLS1@COMCAST.NET
K8BB	K8BB@COMCAST.NET	N8JV	N8JV@COMCAST.NET
K8CC	K8CC@COMCAST.NET	K8KF	N8KF@ARRL.NET
*K8CW	K8CW@ARRL.NET	N8KIE	N8KIE@AOL.COM
K8DD	K8DD@ARRL.NET	N8LJ	N8LJ@USOL.COM
K8ESQ	K8ESQ@SBCGLOBAL.NET	N8MOJ	N8MOJ1@AOL.COM
K8FT	JIM.KUHNS@IEEE.ORG	N8MR	N8MR@ARRL.NET
K8GT	K8GT@ARRL.NET	N8OZ	N8OZ@ARRL.NET
K8IY	DFWOOD@OAKLANDCC.EDU	N8QGC	N8QGC@ARRL.NET
K8JM	K8JM@USOL.COM	N8SHZ	N8SHZ@COMCAST.NET
K8KHZ	K8KHZ@K8KHZ.COM	N8SNM	BNOWAK@SPEAKEASY.NET
K8MSU	K8MSU@JUNO.COM	N8ZX	N8ZX@TDS.NET
*K8NA	K8NA@WIDEPENWEST.COM	NE8I	NE8I@ARRL.NET
K8NWD	K8NWD@COMCAST.NET	NE8Z	NE8Z@YAHOO.COM
K8SIA	K8SIA@ARRL.NET	W1SKU	W1SKU@ARRL.NET
K8SIX	K8SIX@COMCAST.NET	W4CEO	SCAT42@EARTHLINK.NET
K8UP	JOHN@FLEMING-PHOTO.COM	W8AP	W8AP@GEOGBH@NETZERO.COM
K8UT	K8UT@ARRL.NET	W8GF	W8GF@COMCAST.NET
K8ZE	K8ZE@CHARTER.NET	W8LU	W8LU@SCHANG.NET
K8ZZU	K8ZZU@SBCGLOBAL.NET	W8PP	W8PP@COMCAST.NET
KC8JAY	KC8JAY@ARRL.NET	W8SJ	W8SJ@AOL.COM
KC8OBH	KC8OBH@AOL.COM	W8UA	W8UA@MYVINE.COM
KC8PKY	KC8OBH@AOL.COM	WA8BIJ	WA8BIJ@ARRL.NET
KK8I	DL2HBX@DARC.DE	WD8S	WD8S@ARRL.NET
KP4E	KP4E@AMSAT.ORG	WQ8T	WQ8T@ARRL.NET
KQ8D	ROGER49201@YAHOO.COM	WZ8K	WZ8K@MIQRP.NET
KT8X	KT8X@PRODIGY.NET		
LZ4GU	LZ4GU@YAHOO.COM		
N4JQQ	STRUTLEDGE@OIL.NET		

*Indicates perpetual membership. 57 Total Call signs

Note: If your call sign does not appear on the above list, you will not receive further issues of the *Long Path* until your dues are brought up to date. Check with Brad, N8SNM *SEMDXA* Treasurer. If you have paid your 2005/2006 dues and your call is not indicated, check with Brad to resolve any issues.

Our perpetual roster contains a total of 235 call signs. Of these 14 are Silent Keys (SK).

SEMDXA Membership Silent Keys include the following: **KB8IO, KC8OB, KM8Y, N8EOA, N8FGH, NG8S, W8BXM, W8KPL, W8KZM, W8LZV, W8QFR, W8URM, WB8OHO and WD8CRY**

SEMDXA MEMBERSHIP RENEWAL

South Eastern Michigan DX Association (SEMDXA)

Date: _____

Application for new membership _____ or Application for renewal _____ (check one)

Full membership _____ or Associate membership _____ (check one) Dues: \$20.00 annually

(See SEMDXA website for membership requirements)

Present Call Sign: _____ Previous Call Sign: _____

Name: _____

Address: _____

City: _____

State/Zip Code: _____

Telephone: _____

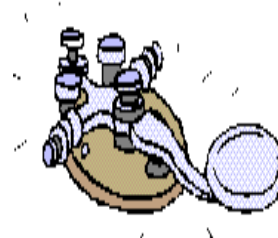
E-mail address: _____

MAKE CHECK PAYABLE TO SEMDXA

Make payment at next SEMDXA meeting or mail with remittance to:


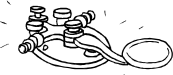
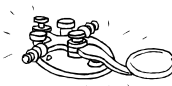


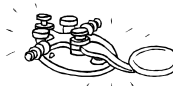
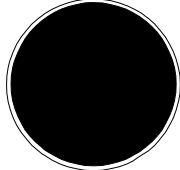
***Brad Nowak, Treasurer
704 South Cass Lake Road
Waterford, Michigan 48328***

NOTE: TO RECEIVE THE CLUB NEWSLETTER "THE LONG PATH" YOU MUST PROVIDE YOUR E-MAIL ADDRESS!



January 2006

SEMDXA Monthly Planner

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																			
1  New Years Day SKN Test	2	3	4	5	6 QRP Test (2)  W1AW Qualifying Run	7 ARRL RTTY Roundup EUCW 160 Test																																																																																																			
8 DARC 10M Test Epiphany Feast	9	10	11  K6YR Qualifying Run	12	13  SEMDXA Meeting	14 Flushing Swap  Full Moon HA DX Test MI QRP Test NA CW QSO Party																																																																																																			
15 Hazel Park Swap	16	17	18	19  W1AW Qualifying Run	20	21 80M Straight-Key Sprint ARRL VHF SS Test LZ CW Test NA SSB QSO Party UK RTTY Test																																																																																																			
22	23	24	25	26	27	28 CQ WW 160 CW Test REF CW Test UBA SSB Test																																																																																																			
29  New Moon	30	31	<table style="margin: auto; border: 1px solid black;"> <tr> <th colspan="7">December 05</th> </tr> <tr> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th> </tr> <tr> <td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td> </tr> <tr> <td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td> </tr> <tr> <td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td> </tr> <tr> <td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td> </tr> </table> <table style="margin: auto; border: 1px solid black;"> <tr> <th colspan="7">February 06</th> </tr> <tr> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th> </tr> <tr> <td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td> </tr> <tr> <td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td> </tr> <tr> <td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td> </tr> <tr> <td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td> </tr> <tr> <td>26</td><td>27</td><td>28</td><td></td><td></td><td></td><td></td> </tr> </table>				December 05							S	M	T	W	T	F	S					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	February 06							S	M	T	W	T	F	S					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
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W6ELProp Short-Path Prediction for 01/28/2006

TERMINAL A: 42.29 N 83.00 W w8gf Sunrise/Set: 1253/2236 UTC Bearing to B: 182.9 deg
 TERMINAL B: 68.83 S 90.58 W Peter I Island Sunrise/Set: 0830/0400 UTC Bearing to A: 6.0 deg
 SSN: 18.6 Flux: 80.0 K: 2 Path Length: 12373 km

SIGNAL LEVELS IN dB ABOVE 0.5 µV

UTC	MUF	3.6 MHz	7.1 MHz	14.1 MHz	21.2 MHz	28.3 MHz
0000	14.4		-8 A	23 B		
0030	12.9		5 A	25 C		
0100	11.4		10 B	27 D		
0130	11.2		21 A	28 D		
0200	11.0	9 A	24 A	28 D		
0230	11.0	22 A	27 A	29 D		
0300	11.0	24 A	34 A	29 D		
0330	11.0	32 A	35 A	29 D		
0400	11.0	32 A	35 A	30 D		
0430	11.1	34 A	36 A	30 D		
0500	10.5	35 A	36 A	30 D		
0530	10.6	36 A	36 A	30 D		
0600	10.7	36 A	36 A	30 D		
0630	11.0	36 A	36 A	30 D		
0700	11.3	36 A	36 A	30 D		
0730	11.5	35 A	36 A	30 D		
0800	11.7	33 A	36 A	30 D		
0830	11.8	31 A	35 A	29 D		
0900	12.1	29 A	35 A	29 D		
0930	11.6	28 A	28 A	29 D		
1000	11.3	20 A	25 A	29 D		
1030	11.1	3 A	22 A	28 D		
1100	11.2		16 A	27 D		
1130	11.4		4 B	25 D		
1200	11.9		-6 A	22 D		
1230	13.1			19 D		
1300	14.8			17 B		
1330	16.7			7 B		
1400	19.1			4 A	17 D	
1430	19.7			2 A	16 D	
1500	20.0			-6 A	15 C	
1530	20.2			-8 A	14 C	
1600	20.5			-10 A	13 C	
1630	20.7				13 C	
1700	20.9				12 C	
1730	21.1				12 C	
1800	21.1				12 C	
1830	21.1				12 C	
1900	21.2				12 B	
1930	21.3				13 B	
2000	21.4			-9 A	13 B	
2030	21.4			-7 A	14 B	
2100	21.5			0 A	15 B	
2130	21.4			2 A	16 B	
2200	19.9			5 A	17 C	
2230	18.7			8 A	18 D	
2300	17.4			17 A	20 D	
2330	15.6			20 A		

Availabilities A: 75 - 100% B: 50 - 75% C: 25 - 50% D: 1 - 25%
 Signal levels suppressed if below -10 dB or if predicted availability is zero