

**MOKAPU**

Minimum noise level: -163.6 dBw

Sunset 0518Z

Sunrise 1555Z

Known possible A3 signal sources within 15 kHz of 3105 kHz  
(ITU-R P.372-8 Quiet Rural Man-made noise)

Name	Quarry Hts	Melbourne	Navarin Mys	Stalino	Gardner	Oust-Kiakhta	San Diego	L.A.	SanFran	Seattle	Billings
Call Sign	(Army Air)	3AR	UGU1	RW26	KHAQQ	UTC	SAN	LAX	SFO	SEA	UQP1
Freq, kHz	3100	3100	3100	3104	3105	3105	3105	3105	3105	3105	3110
Latitude	8-57N	38-47S	62-17N	47-59N	4-40S	50-13N	32-48N	34-06N	37-48N	47-48N	69-53N
Longitude	79-33W	144-58E	179-04E	37-48E	174-32W	106-17E	117-06W	118-24W	122-24W	122-18W	176-05E
Sunset	2341Z	0712Z	0954Z	1731Z	0538Z	1307Z	0300Z	0309Z	0335Z	0408Z	SSSSS
Sunrise	1104Z	2136Z	1420Z	0134Z	1747Z	2051Z	1245Z	1247Z	1253Z	1219Z	SSSSS
Bearing	086	222	346	349	214	320	64	61	54	39	349
Distance, nmi	4583	4803	2637	6555	1815	4645	2303	2228	2081	2325	3062
Power, W	75	70	40	600	50	60	50	50	50	50	40
Power, dBw	18.8	18.5	16.0	27.8	17.0	17.8	17	17	17	17	16.0
Rcvr Sel Loss, dB	23	23	23	0	0	0	0	0	0	0	23
Min Loss (FS) db	120.8	121.2	116.0	124.0	112.8	121.0	114.9	114.6	114.0	115.0	117.4
Max SNR (FS) dB	38.5	37.8	40.6	67.4	67.8	60.4	65.7	66.0	66.6	65.6	39.3

July 4 0833Z	No bearing. Faint carrier, approx 3105, immediately following KGU broadcast. Too weak to distinguish any words.										
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-18		11	-230	15	-43	9.0	10	12	10	13
Adj Mean SNR dB	-41		-12	-230	15	-43	9	10	12	10	-10
90th Pctile incr dB	16.4		9.9	6.7	10.7	6.9	15.8	15.9	16.2	14.3	7.2
Sigma SNR dB	12.8		7.7	5.2	8.4	5.4	12.3	12.4	12.7	11.2	5.6
Std Devs Rqrd	6.4		6.9	51.8	3.1	15.6	2.6	2.5	2.3	2.8	9.1
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	7.77E-11	0.00	3.62743E-12	0.00E+00	9.28E-04	4.78E-55	4.64E-03	6.07E-03	1.03E-02	2.72E-03	6.14E-20

July 4 1022Z	No bearing. 2 long dashes, possible voice, on 3105. Wailupe heard man say "31" at 1031Z. KGMB bcst at 1000 requested Earhart dashes.										
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-16		1	-223	16	-29	9	10	11	10	10
Adj Mean SNR dB	-39		-22	-223	16	-29	9	10	11	10	-13
90th Pctile incr dB	12.7		16.2	25.8	11.2	7.4	16.0	16.0	16.2	14.7	8.0
Sigma SNR dB	9.9		12.7	20.2	8.8	5.8	12.5	12.5	12.7	11.5	6.3
Std Devs Rqrd	8.1		5.0	13.1	2.9	12.1	2.6	2.5	2.4	2.7	8.6
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	3.72E-16	0.00	3.21E-07	1.70E-39	2.11E-03	4.78E-34	5.08E-03	6.33E-03	8.44E-03	3.41E-03	2.81E-18

MOKAPU		Quarry Hts	Melbourne	Navarin	Stalino	Gardner	Oust-Kiakhta	San Diego	L.A.	SanFran	Seattle	Billings
<b>July 4 1512Z</b>	Bearing approx 175 on very faint broad signal, apparently A3. Midway log says Mokapu took this bearing; not mentioned in Mokapu log.											
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-158		12	-129	20	-10	-5	-3	0	-2	-5	
Adj Mean SNR dB	-181		-11	-129	20	-10	-5	-3	0	-2	-28	
90th Pctile incr dB	10.7		11.4	11.6	11.5	10.9	10.9	10.9	11.3	10.7	12.1	
Sigma SNR dB	8.4		8.9	9.1	9.0	8.5	8.5	8.5	8.8	8.4	9.5	
Std Devs Rqrd	26.6		5.8	18.8	2.3	6.0	5.4	5.2	4.6	5.1	7.3	
Reception case	2	1	2	2	2	2	2	2	2	2	2	
Reception Prob	1.07E-155	0.00	2.63E-09	8.23E-79	9.17E-03	1.06E-09	3.30E-08	1.19E-07	1.71E-06	1.34E-07	1.45E-13	

<b>July 4 1523Z</b>	Bearing 213 on weak, swinging signal close to 3105											
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-158		12	-129	20	-10	-5	-3	0	-2	-5	
Adj Mean SNR dB	-181		-11	-129	20	-10	-5	-3	0	-2	-28	
90th Pctile incr dB	10.7		11.4	11.6	11.5	10.9	10.9	10.9	11.3	10.7	12.1	
Sigma SNR dB	8.4		8.9	9.1	9.0	8.5	8.5	8.5	8.8	8.4	9.5	
Std Devs Rqrd	26.6		5.8	18.8	2.3	6.0	5.4	5.2	4.6	5.1	7.3	
Reception case	2	1	2	2	2	2	2	2	2	2	2	
Reception Prob	1.07E-155	0.00	2.63E-09	8.23E-79	9.17E-03	1.06E-09	3.30E-08	1.19E-07	1.71E-06	1.34E-07	1.45E-13	

<b>July 5 0630Z</b>	Bearing approx 215 degrees, 3105, distinct dashes immed following KGMB bcst											
Required SNR dB	42	42	42	42	42	42	42	42	42	42	42	42
Mean SNR dB	-13		14	-300	27	-114	15	16	18	22	0	
Adj Mean SNR dB	-36		-9	-300	27	-114	15	16	18	22	-23	
90th Pctile incr dB	16.8		9.4	8.5	10.0	8.7	15.9	16.2	16.9	12.8	9.1	
Sigma SNR dB	13.1		7.3	6.6	7.8	6.8	12.4	12.7	13.2	10.0	7.1	
Std Devs Rqrd	5.9		6.9	51.5	1.9	23.0	2.2	2.1	1.8	2.0	9.1	
Reception case	2	1	2	2	2	2	2	2	2	2	2	
Reception Prob	1.40E-09	0.00	1.90E-12	0.00E+00	2.14E-02	7.08E-117	1.35E-02	1.72E-02	2.34E-02	1.90E-02	3.04E-20	

<b>July 5 0830Z</b>	No bearing. Possible voice on 3105, too weak to distinguish words											
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-20		13	-272	15	-80	10	9	12	10	5	
Adj Mean SNR dB	-43		-10	-272	15	-80	10	9	12	10	-18	
90th Pctile SNR dB	16.8		9.4	6.8	10.9	7.1	9	16.2	16.5	15.2	7.6	
Sigma SNR dB	13.1		7.3	5.3	8.5	5.5	7.0	12.7	12.9	11.9	5.9	
Std Devs Rqrd	6.4		6.9	58.9	3.1	21.8	4.5	2.5	2.2	2.6	9.9	
Reception case	2	1	2	2	2	2	2	2	2	2	2	
Reception Prob	7.77E-11	0.00	1.90E-12	0.00E+00	1.12E-03	8.53E-106	4.26E-06	5.55E-03	1.13E-02	4.41E-03	1.44E-23	

**MOKAPU**

	Quarry Hts	Melbourne	Navarin	Stalino	Gardner	Oust-Kiakhta	San Diego	L.A.	SanFran	Seattle	Billings
<b>July 5 1030Z</b>	No bearing. Possible voice on 3105, too weak to distinguish words										
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-13		2	-257	16	-32	9	10	11	9	6
Adj Mean SNR dB	-36		-21	-257	16	-32	9	10	11	9	-17
90th Pctile incr dB	7.8		18.6	7.8	11.4	7.5	16.1	16.2	16.2	15.6	10
Sigma SNR dB	6.1		14.5	6.1	8.9	5.9	12.6	12.7	12.7	12.2	7.8
Std Devs Rqrd	12.6		4.3	48.9	2.8	12.5	2.5	2.4	2.4	2.6	7.4
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	6.69E-37	0.00	9.91E-06	0.00E+00	2.46E-03	6.27E-36	5.31E-03	6.87E-03	8.44E-03	4.22E-03	5.68E-14

<b>July 5 1225Z</b>	No bearing. Apparently same signal as 0630Z, 0830Z, and 1030Z										
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-28		5	-211	15	-36	17	21	15	17	5
Adj Mean SNR dB	-51		-18	-211	15	-36	17	21	15	17	-18
90th Pctile incr dB	8.7		15.7	14.8	11.5	14.1	10.9	9.6	13.1	10.9	10.6
Sigma SNR dB	6.8		12.3	11.6	9.0	11.0	8.5	7.5	10.2	8.5	8.3
Std Devs Rqrd	13.5		4.8	21.8	2.9	7.0	2.8	2.7	2.5	2.8	7.1
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	4.82E-42	0.00	7.54E-07	1.31E-105	1.88E-03	1.37E-12	2.38E-03	3.75E-03	5.37E-03	2.38E-03	5.22E-13

<b>July 5 1350Z</b>	No bearing. Apparently same signal as above.										
Required SNR dB	41	41	41	41	41	41	41	41	41	41	41
Mean SNR dB	-125		16	-177	18	-19	7	8	17	7	5
Adj Mean SNR dB	-148		-7	-177	18	-19	7	8	17	7	-18
90th Pctile incr dB	13.9		11.3	10.8	10.4	12.4	11.6	11.6	10.3	11.3	10.9
Sigma SNR dB	10.9		8.8	8.4	8.1	9.7	9.1	9.1	8.0	8.8	8.5
Std Devs Rqrd	17.4		5.4	25.8	2.8	6.2	3.8	3.6	3.0	3.9	6.9
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	3.83E-68	0.00	2.71E-08	1.70E-147	2.29E-03	2.94E-10	8.76E-05	1.35E-04	1.42E-03	5.86E-05	2.13E-12

<b>July 6 0947Z</b>	Bearing 196.5, "believed to be Itasca phone transmitter". NRU1 called KHAQQ 0945Z-0948Z. Itasca actual bearing 232. Event not in Mokapu log.										
Required SNR dB	42	42	42	42	42	42	42	42	42	42	42
Mean SNR dB	-15		6	-277	14	-36	9	10	11	10	11
Adj Mean SNR dB	-38		-17	-277	14	-36	9	10	11	10	-12
90th Pctile SNR dB	11.4		15.1	8.0	11.3	7.8	16.5	16.5	16.3	15.5	8.1
Sigma SNR dB	8.9		11.8	6.3	8.8	6.1	12.9	12.9	12.7	12.1	6.3
Std Devs Rqrd	9.0		5.0	51.0	3.2	12.8	2.6	2.5	2.4	2.6	8.5
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	1.32E-19	0.00	2.85E-07	0.00E+00	7.53E-04	8.20E-38	5.08E-03	6.29E-03	7.15E-03	4.02E-03	7.11E-18

<b>July 7 0645Z</b>	Harmonics of several amateur fones close to 3105.										
Required SNR dB	43	43	43	43	43	43	43	43	43	43	43
Mean SNR dB	-13		9	-163	28	-154	15	16	17	24	-7
Adj Mean SNR dB	-36		-14	-163	28	-154	15	16	17	24	-30
90th Pctile SNR dB	17.6		9.5	11.6	9.8	8.9	17	17.3	18	11.3	9.1
Sigma SNR dB	13.8		7.4	9.1	7.7	7.0	13.3	13.5	14.1	8.8	7.1
Std Devs Rqrd	5.7		7.7	22.7	2.0	28.3	2.1	2.0	1.8	2.2	10.3
Reception case	2	1	2	2	2	2	2	2	2	2	2
Reception Prob	4.58E-09	0.00	7.95E-15	1.11E-114	2.03E-02	6.86E-177	1.55E-02	1.91E-02	2.30E-02	1.41E-02	4.90E-25