5.1.4.2 WAC FM SYSTEM GAIN REPORT

As reported in Reference 5.1.4.2-1

Reference 5.1.4.2-1 - IOM 388-PAG-CCA97-10, C. Avis, "WAC FM CALIBRATION RESULTS: SYSTEM GAIN", September 18, 1997

5.1.4.2.1 INTRODUCTION

The Wide-angle Flight Model thermal/vacuum testing included the acquisition of a set of images for determination the System Gain Constants. These constants characterize the electronics in units of electrons/DN at each of the four gain settings.

Sequences of increasing exposures were taken at temperatures of +5° C and +25° C. Gain 0 and 1 were taken in 4x4 and 2x2 mode respectively with Antiblooming 'OFF'. Both Gain 2 and 3 were taken in 1x1 mode with Antiblooming 'OFF'. In addition, Gain 2 was also taken with Antiblooming 'ON'.

5.1.4.2.2 METHOD

At each gain setting, one method was used to derive the System Gain Constant and two were used to derive the ratios of the Constants. The results of each method are compared in the next section.

5.1.4.2.2.1 Method 1 - Signal vs. Noise

Images of the same exposure time were combined to produce signal and noise values at 100 small areas at all available signal levels. Values for System Gain Constant and Read Noise Floor were then derived independently at each of these small areas. This was done by solving the following equation using least-squares.

$$N^2 = S/K + R^2$$

where	K	is the System Gain Constant (in electrons/DN)
	R	is the Read Noise Floor (in DN)
	S	is the measured signal (in DN)
	N	is the measured noise (in DN)

The 100 derived values were then compared and any areas giving values more than 2 sigma from the mean were flagged as bad. Global values for K and R were then derived by averaging the values at the remaining good areas.

Method 1 Results
The best fit values for the Gain Constant (K) and Read Noise Floor (R) are tabulated below. Because the value for R is dependent upon the fit to the entire set of data, the following table also includes the noise value of the zero exposure frames of the sequence. This is probably more reliable as a value for the noise floor.

Global values of Gain Constant, Read Noise Floor and zero exposure noise for +25°C:

Gain	anti-blooming	K (e/dn)	sigma(K)	R (dn)	sigma(R)	Zero Exp. Noise (dn)
0	OFF	204.92	31.36	0.47	0.22	0.33
1	OFF	90.69	4.10	0.62	0.19	0.38
2	OFF	27.55	1.49	0.70	0.64	0.58
2	ON	27.76	1.18	0.89	0.49	0.60
3	OFF	11.53	0.46	1.22	0.92	1.12

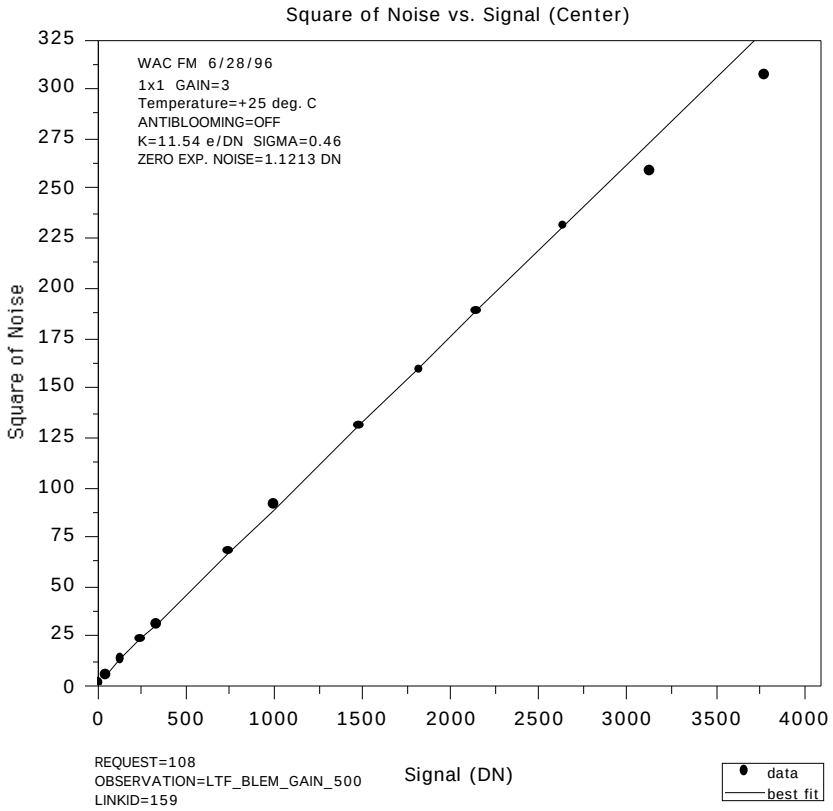
Global values of Gain Constant, Read Noise Floor and zero exposure noise for +5°C:

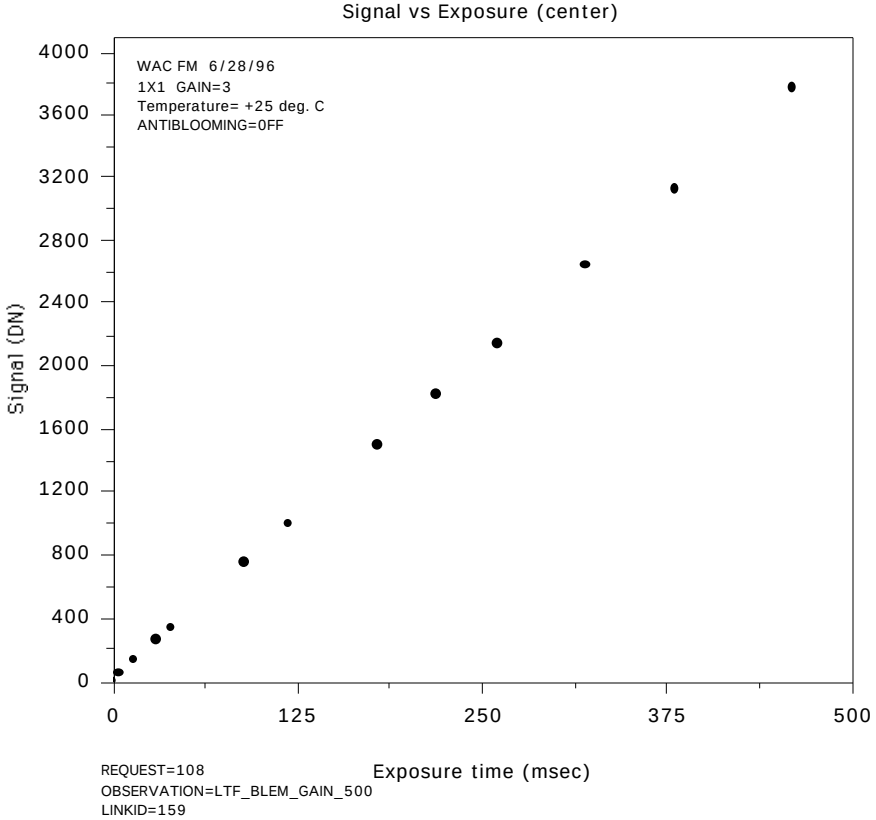
Gain	anti-blooming	K (e/dn)	sigma(K)	R (dn)	sigma(R)	Zero Exp. Noise (dn)
0	OFF	201.93	16.49	0.45	0.12	0.40
1	OFF	90.90	4.62	0.66	0.21	0.37
2	OFF	27.63	1.38	0.85	0.56	0.57
2	ON	27.73	1.12	0.90	0.50	0.57
3	OFF	11.42	0.48	1.46	0.79	1.31

Notes:
Due to linearity and stability problems, the results for Gain 0 were calculated using exposure times of 0 to 70 milliseconds (for +5°C) and 0 to 30 milliseconds (for +25°C).
For the rest of gain states, the three highest exposure levels were excluded from the calculation because some nonlinearity was starting to show.

Conclusions :
Gain 0 (4x4 mode) has an unusual oscillation in the Signal vs. Noise plot for signal above about 1000 DN. This oscillation is not understood.
Gain 2 (1x1 mode) apparently has full-well occurring between 3200 and 3800 DN.
For Gain 2 (1x1 mode), the use of Antiblooming mode had no effect on the Gain Constant value.
There is no difference in behavior at the two test temperatures.

The following plots are for the center region of the image for each gain state. The • symbols are the data points from which the line (the least-squares fit) is derived. Two plots are provided for each gain state. One plot shows N^2 vs. S so that the fit being plotted is linear. The other plot shows Signal vs. Exposure time.


Square of Noise vs. Signal (Center)
WAC FM 6/28/96
1x1 GAIN=3
Temperature=+25 deg. C
ANTIBLOOMING=OFF
K=11.54 e/DN SIGMA=0.46
ZERO EXP. NOISE=1.1213 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_500
LINKID=159


Signal vs Exposure (center)
WAC FM 6/28/96
1X1 GAIN=3
Temperature= +25 deg. C
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
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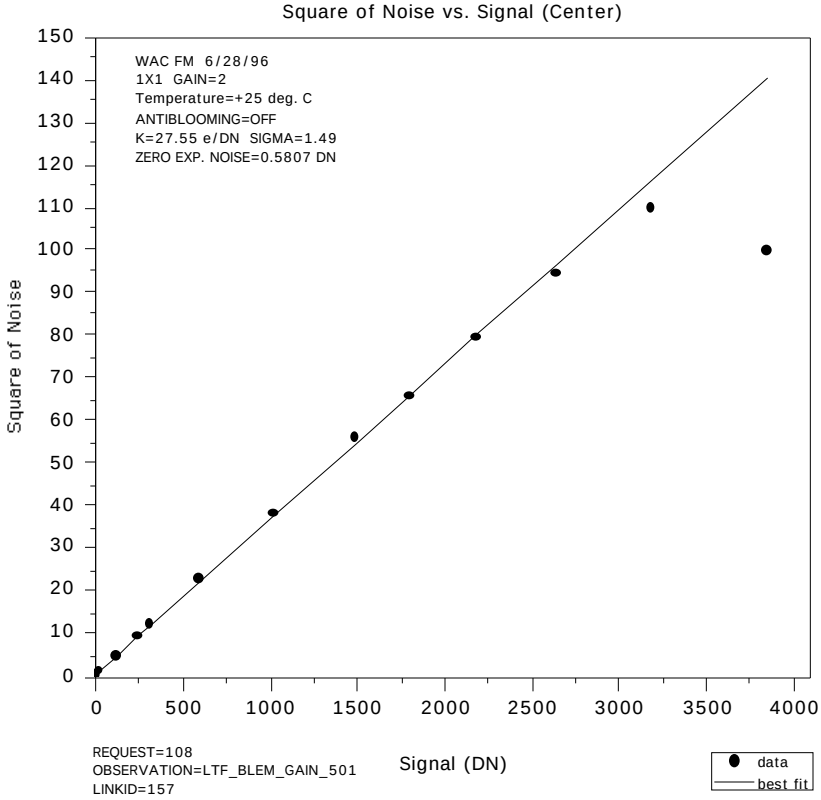
LINKID=159


Square of Noise vs. Signal (Center)
WAC FM 6/28/96
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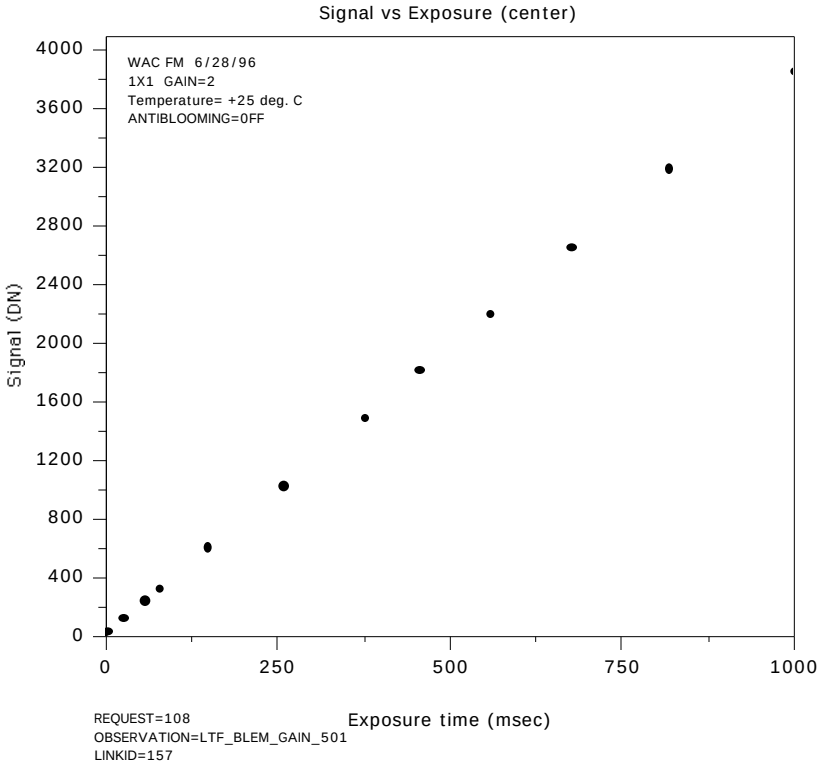
Temperature=+25 deg. C
ANTIBLOOMING=OFF
K=27.55 e/DN SIGMA=1.49
ZERO EXP. NOISE=0.5807 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_501
LINKID=157


Signal vs Exposure (center)
WAC FM 6/28/96
1X1 GAIN=2
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Signal (DN)
Exposure time (msec)
REQUEST=108
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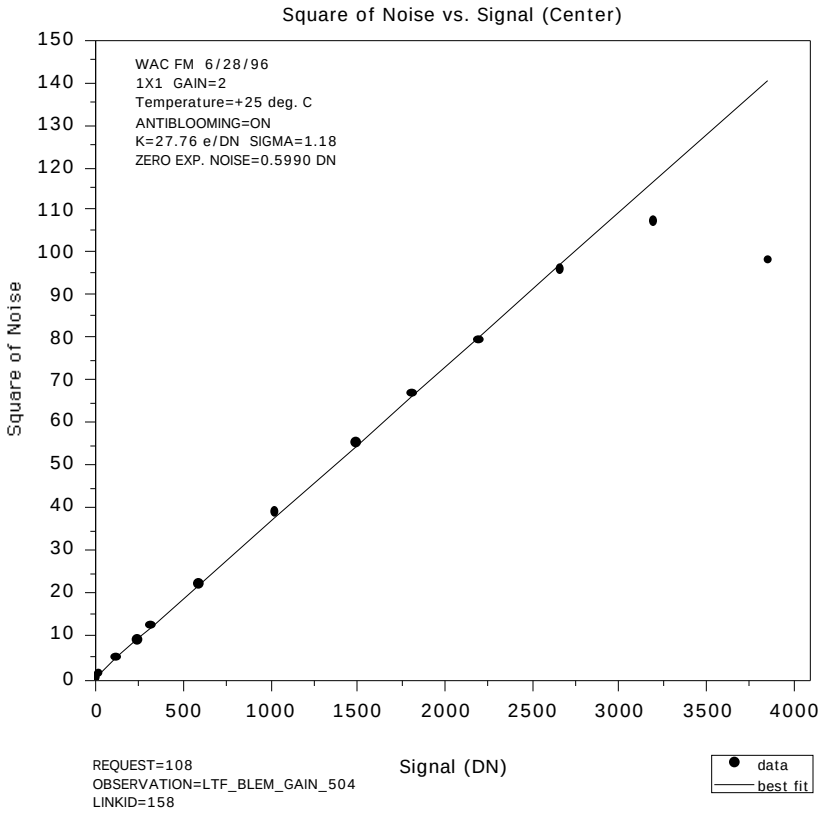
LINKID=157


Square of Noise vs. Signal (Center)
WAC FM 6/28/96
1X1 GAIN=2
Temperature=+25 deg. C
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K=27.76 e/DN SIGMA=1.18
ZERO EXP. NOISE=0.5990 DN
Square of Noise
Signal (DN)
data
best fit
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OBSERVATION=LTF_BLEM_GAIN_504
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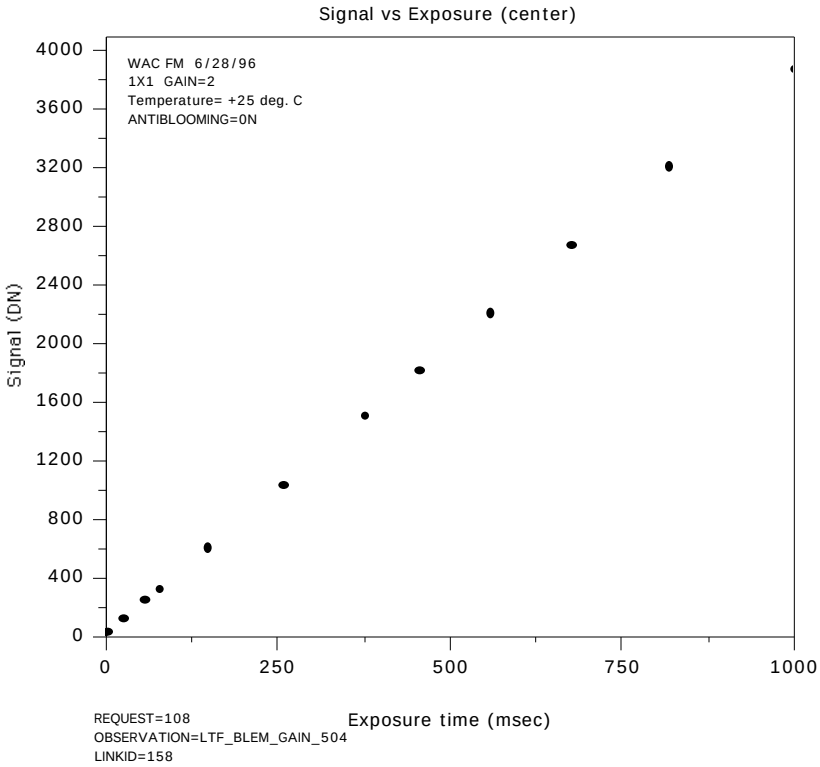
Signal vs Exposure (center)
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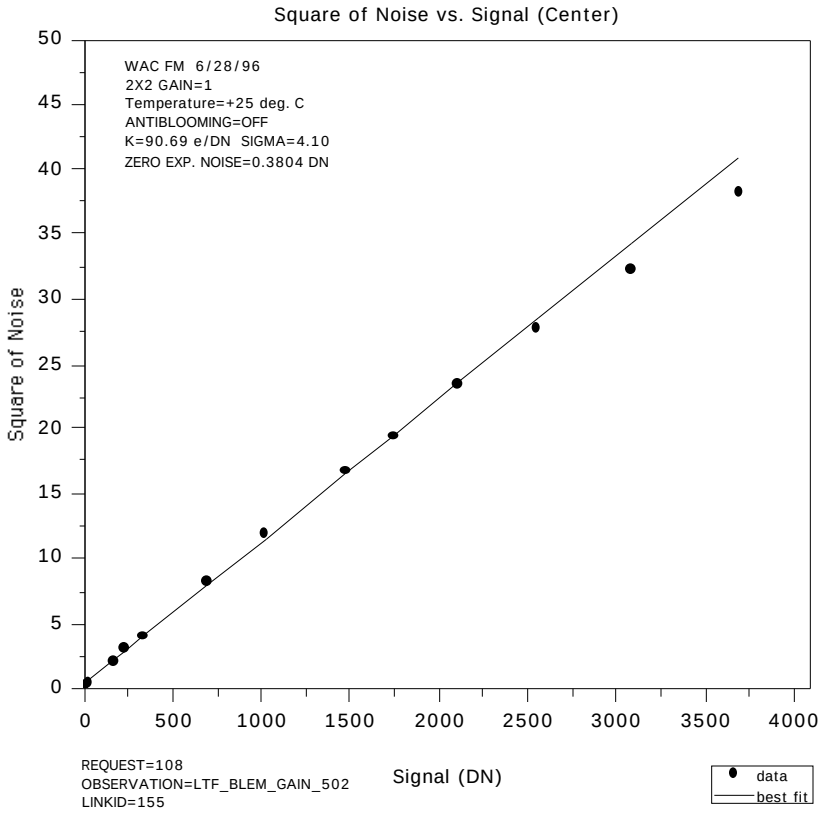
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_504
LINKID=158


Square of Noise vs. Signal (Center)
WAC FM 6/28/96
2X2 GAIN=1
Temperature=+25 deg. C
ANTIBLOOMING=OFF
K=90.69 e/DN SIGMA=4.10
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Square of Noise
Signal (DN)
data
best fit
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OBSERVATION=LTF_BLEM_GAIN_502
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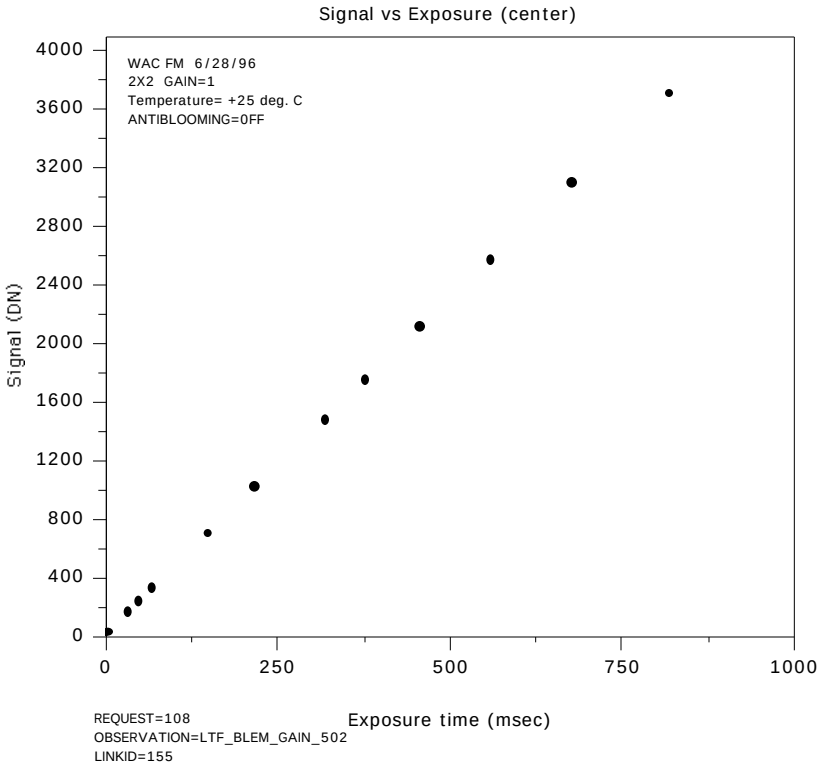
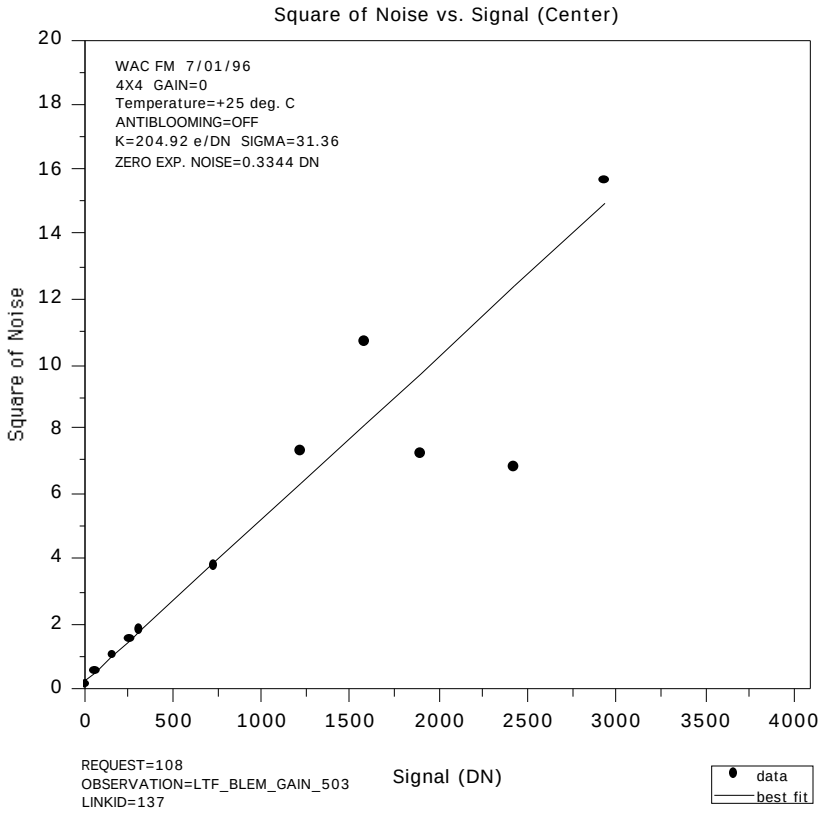
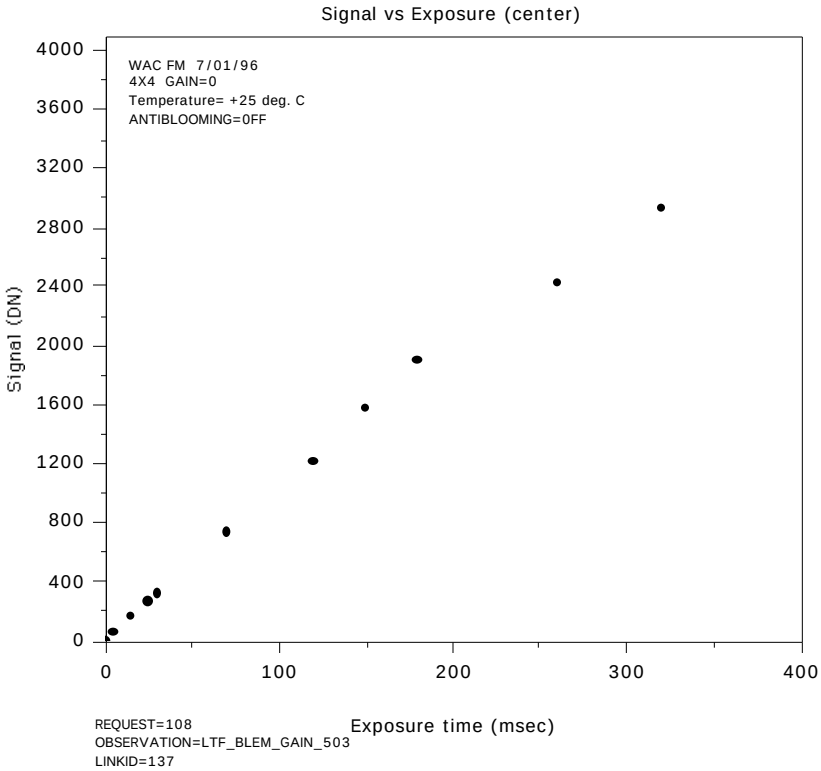

Signal vs Exposure (center)
WAC FM 6/28/96
2X2 GAIN=1
Temperature= +25 deg. C
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_502
LINKID=155


Square of Noise vs. Signal (Center)
WAC FM 7/01/96
4X4 GAIN=0
Temperature=+25 deg. C
ANTIBLOOMING=OFF
K=204.92 e/DN SIGMA=31.36
ZERO EXP. NOISE=0.3344 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_503
LINKID=137


Signal vs Exposure (center)
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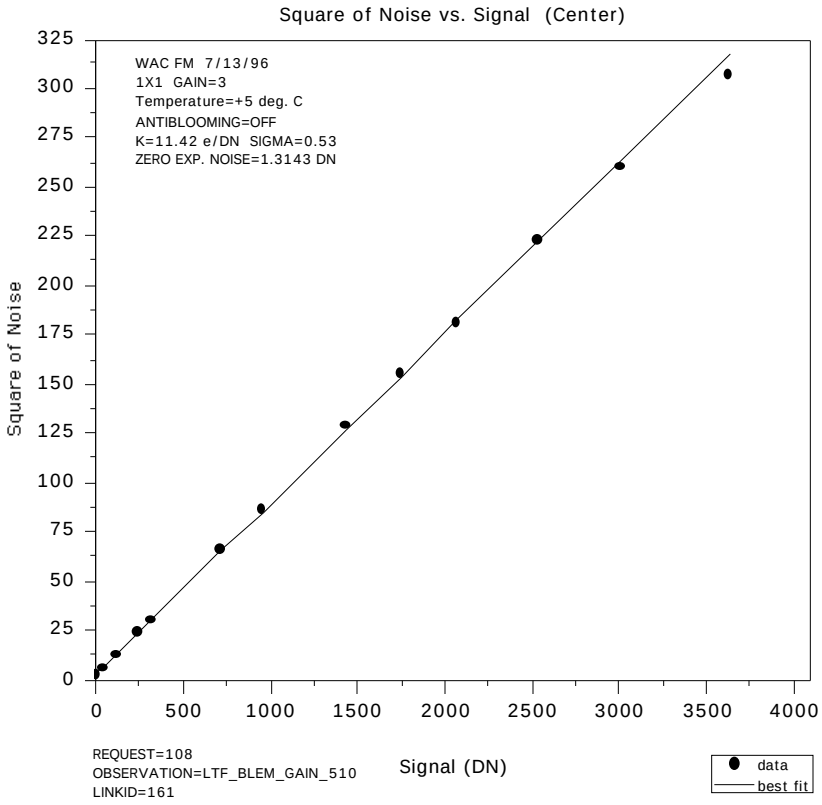
4X4 GAIN=0
Temperature= +25 deg. C
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_503
LINKID=137


Square of Noise vs. Signal (Center)
WAC FM 7/13/96
1X1 GAIN=3
Temperature=+5 deg. C
ANTIBLOOMING=OFF
K=11.42 e/DN SIGMA=0.53
ZERO EXP. NOISE=1.3143 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
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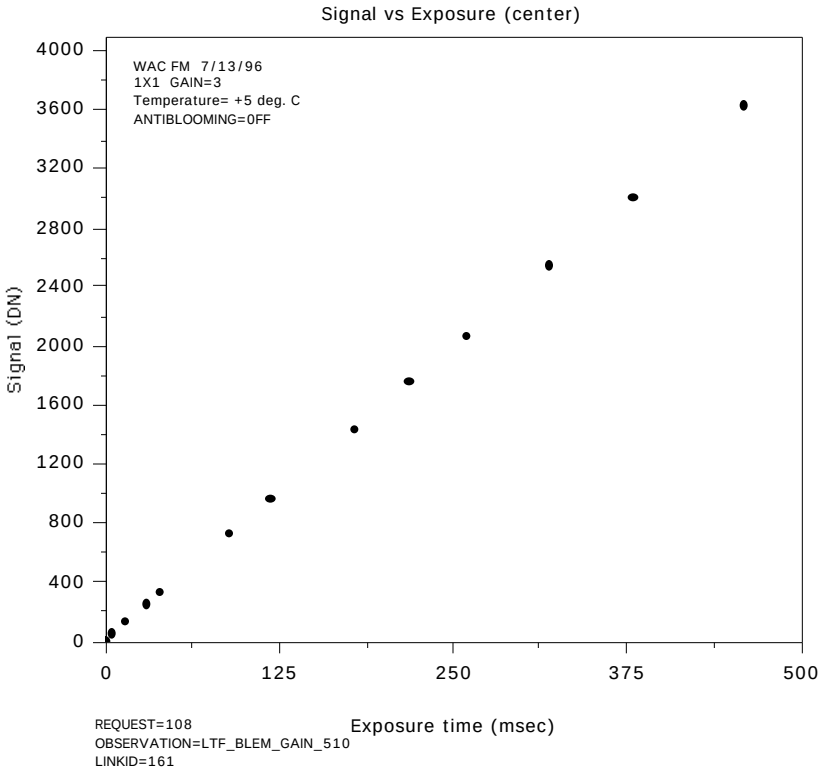
Signal vs Exposure (center)
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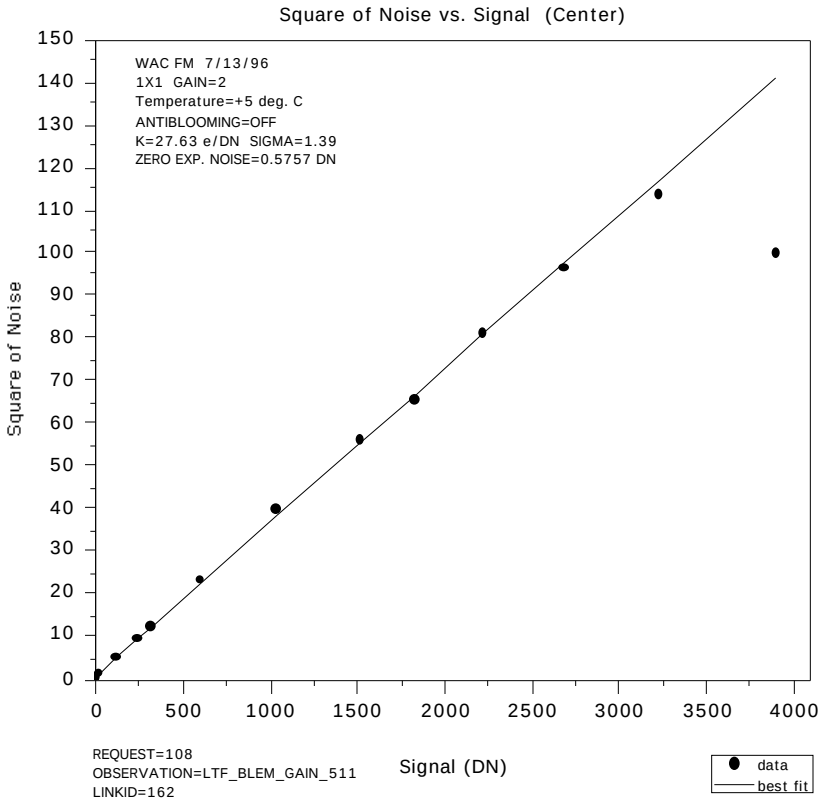
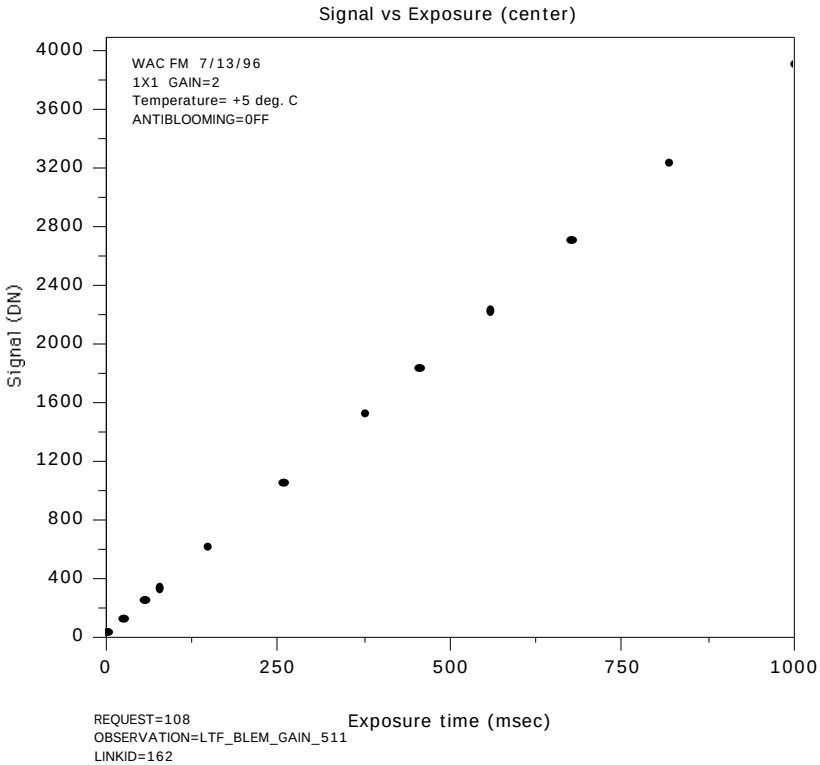
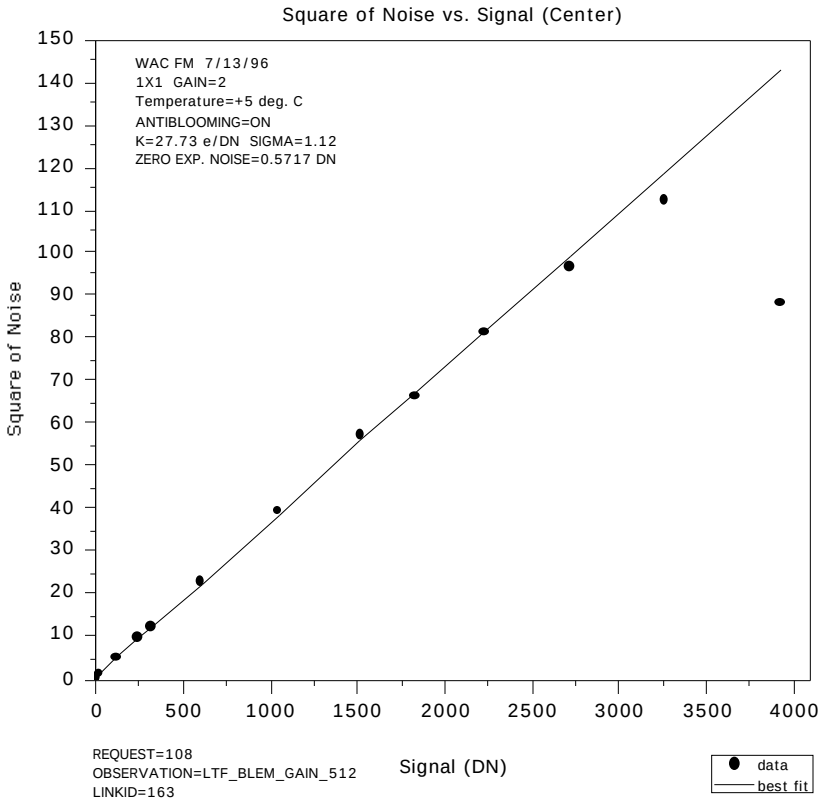
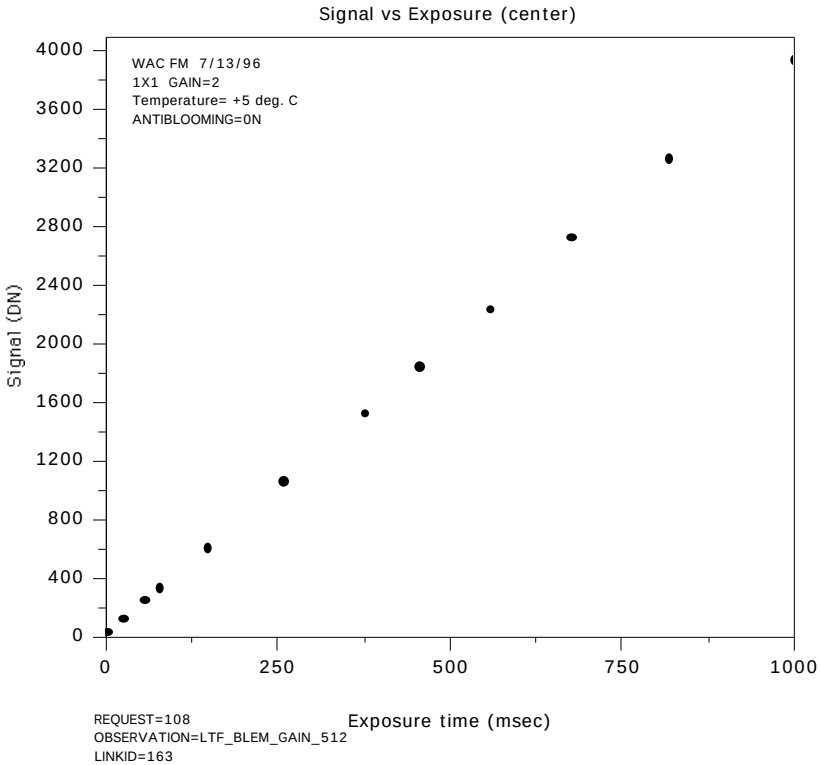
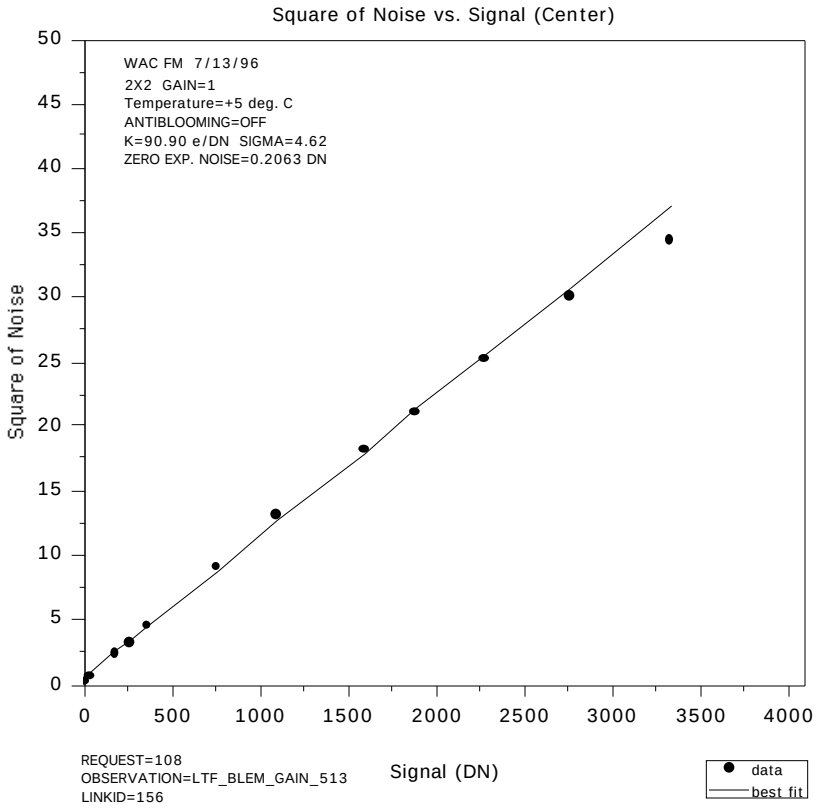
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_510
LINKID=161

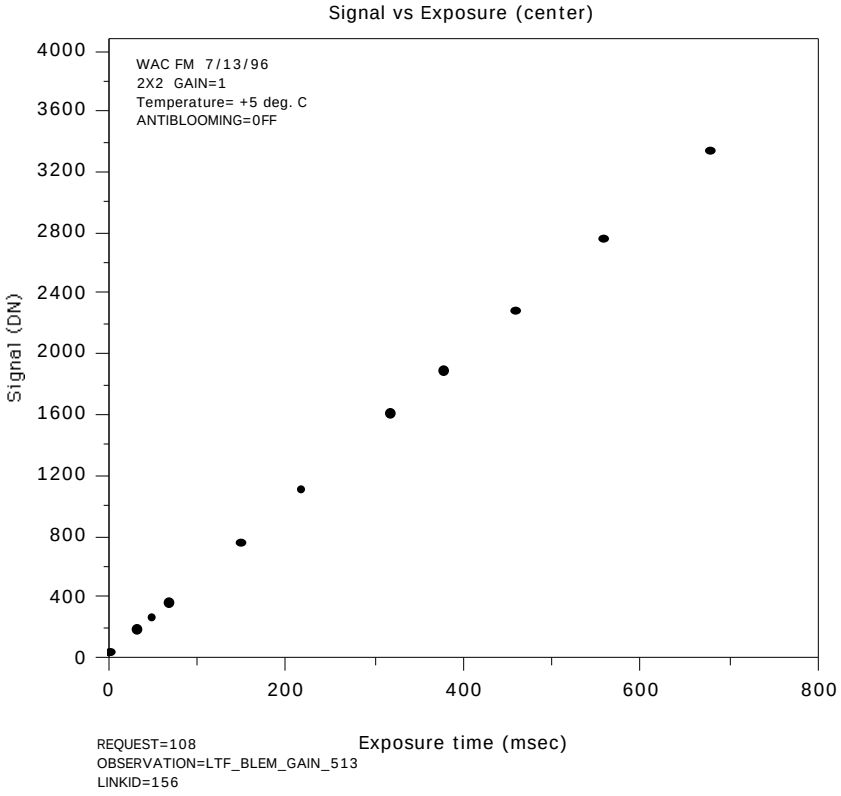

Square of Noise vs. Signal (Center)
WAC FM 7/13/96
1X1 GAIN=2
Temperature=+5 deg. C
ANTIBLOOMING=OFF
K=27.63 e/DN SIGMA=1.39
ZERO EXP. NOISE=0.5757 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_511
LINKID=162

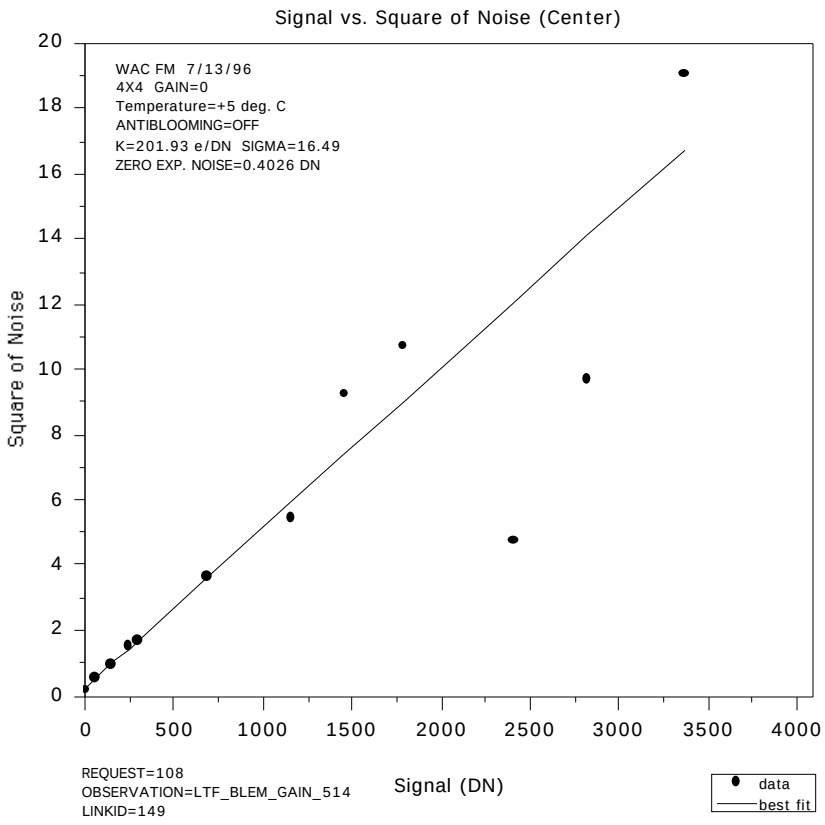

Signal vs Exposure (center)
WAC FM 7/13/96
1X1 GAIN=2
Temperature= +5 deg. C
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_511
LINKID=162

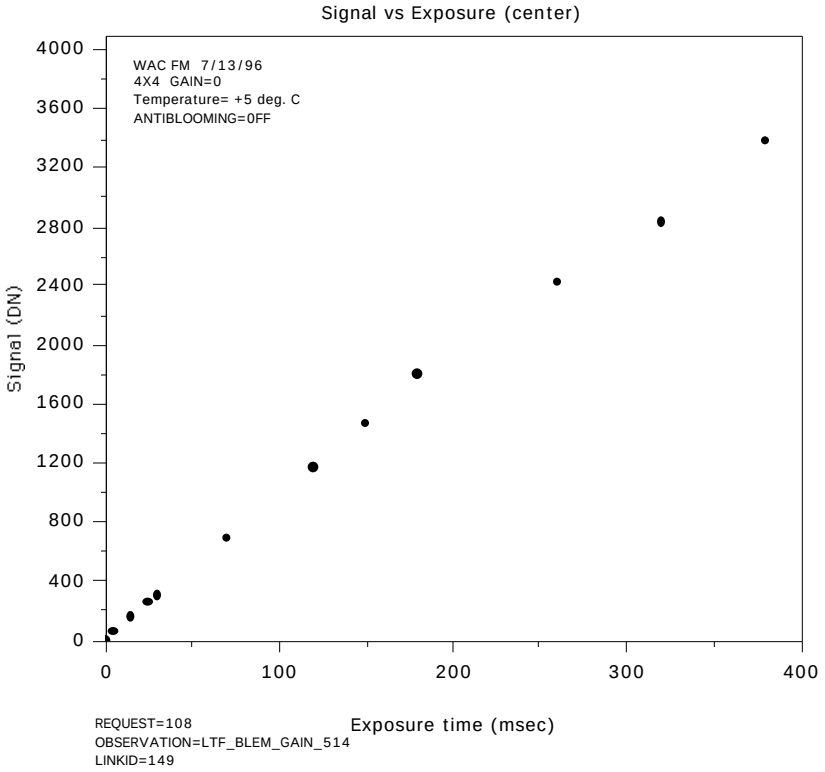

Square of Noise vs. Signal (Center)
WAC FM 7/13/96
1X1 GAIN=2
Temperature=+5 deg. C
ANTIBLOOMING=ON
K=27.73 e/DN SIGMA=1.12
ZERO EXP. NOISE=0.5717 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_512
LINKID=163


Signal vs Exposure (center)
WAC FM 7/13/96
1X1 GAIN=2
Temperature= +5 deg. C
ANTIBLOOMING=0N
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_512
LINKID=163


Square of Noise vs. Signal (Center)
WAC FM 7/13/96
2X2 GAIN=1
Temperature=+5 deg. C
ANTIBLOOMING=OFF
K=90.90 e/DN SIGMA=4.62
ZERO EXP. NOISE=0.2063 DN
Square of Noise
Signal (DN)
data
best fit
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_513
LINKID=156


Signal vs Exposure (center)
WAC FM 7/13/96
2X2 GAIN=1
Temperature= +5 deg. C
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_513
LINKID=156


Signal vs. Square of Noise (Center)
WAC FM 7/13/96
4X4 GAIN=0
Temperature=+5 deg. C
ANTIBLOOMING=OFF
K=201.93 e/DN SIGMA=16.49
ZERO EXP. NOISE=0.4026 DN
Square of Noise
Signal (DN)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_514
LINKID=149
data
best fit


Signal vs Exposure (center)
WAC FM 7/13/96
4X4 GAIN=0
Temperature= +5 deg. C
ANTIBLOOMING=0FF
Signal (DN)
Exposure time (msec)
REQUEST=108
OBSERVATION=LTF_BLEM_GAIN_514
LINKID=149

5.1.4.2.2.2 Method 2 - Ratio of flat-field images

Flat-field frames were selected which were taken under identical circumstances except that the gain settings were different. Frames were chosen with mean DN levels about 1000 DN (before any non-linearities appear). After appropriate dark-current subtraction, the frames at the various gain states were ratioed. The resulting means are reported below. These values should compare to the ratio of the Gain Constants derived in Method 1.

	$(DN-DC)_b / (DN-DC)_a$	
Ratio a/b	+ 5° C	+25° C
Gain 0 / Gain 3	17.68	17.75
Gain 1 / Gain 3	7.65	7.56
Gain 2 / Gain 3	2.35	2.32

5.1.4.2.2.3 Method 3 - Ratio of Sensitivities

In the characterization of the system sensitivity (see "WAC FM Calibration Results: Sensitivity", C. Avis, IOM 388-PAG-CCA97-4, 12 March 1997), a best fit slope was fit to a set of points on a plot of Signal vs. 'Energy'. In this calibration, the Signal was in DN and the 'Energy' was in units of picoamp-milliseconds (the source brightness times the exposure time). The sensitivity slopes were calculated at 100 areas of the frame. The 100 values of each gain setting were ratioed and the resulting frame-wide mean ratio is reported below.

	$(DN/pa\text{-}msec)_b / (DN/pa\text{-}msec)_a$	
Ratio a/b	+ 5° C	+25° C
Gain 0 / Gain 3	17.78	16.57
Gain 1 / Gain 3	7.18	7.68
Gain 2 / Gain 3	2.34	2.36

5.1.4.2.3 RECONCILIATION OF RESULTS

Method 3 was settled upon as giving the best set of gain ratios. The Gain 2 Gain Constant value from Method 1 was established as the baseline Gain Constant. The other Gain Constant values tabulated below were derived by multiplying this baseline times the Method 3 ratios.

The estimated error of the derived Gain Constants was produced by the appropriate combination of the errors reported for the Gain 2 Gain Constant and the sensitivity measurements used in Method 3. This error is an upper bound of the actual error. Of

course, because the Gain 2 Gain Constant was used as the baseline, its error was not derived and is the original reported error.

	+5° C					+25° C				
Gain	Method 1 e^-/DN	Method 3 ratio relative to Gain 2	Derived e^-/DN	Error estimate in e^-/DN	% change from Method 1	Method 1 e^-/DN	Method 3 ratio relative to Gain 2	Derived e^-/DN	Error estimate in e^-/DN	% change from Method 1
0	201.93	7.61	210.56	16.4	+4.3	204.92	7.03	194.30	16.2	-5.1
1	90.90	3.07	85.09	7.13	-6.4	90.69	3.26	90.13	8.07	-0.6
2	27.68	1.	27.68	1.25	-	27.66	1.	27.66	1.33	-
3	11.42	0.428	11.85	1.27	+3.8	11.53	0.424	11.74	1.36	+1.8

5.1.4.2.4 CONCLUSIONS

1. Method 3 has established the gain ratios for the two temperatures tested. These are listed in the above table.
2. The set of derived Gain Constant values in the above table are the best estimate for these two temperatures. They agree very well for the Gain 3 and 2 cases but diverge significantly for the Gain 1 and 0 cases.

image	day	eventtime	observation	gain		mode	exp
+25° C							
126930	180	4:43:13.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	0
126931	180	4:44:42.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	0
126932	180	4:46:11.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	0
126933	180	4:47:40.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	5
126934	180	4:49:9.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	5
126935	180	4:50:38.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	5
126936	180	4:51:44.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	15
126937	180	4:53:13.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	15
126938	180	4:54:42.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	15
126939	180	4:56:11.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	30
126940	180	4:57:40.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	30
126941	180	4:59:9.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	30
126942	180	5:0:15.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	40
126943	180	5:1:44.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	40
126944	180	5:3:13.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	40
126945	180	5:4:42.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	90
126946	180	5:6:11.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	90
126947	180	5:7:40.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	90
126948	180	5:8:46.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	120
126949	180	5:10:15.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	120
126950	180	5:11:44.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	120
126952	180	5:14:42.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	180
126953	180	5:16:11.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	180
126969	180	6:11:48.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	180
126954	180	5:17:17.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	220
126955	180	5:18:46.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	220
126956	180	5:20:15.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	220
126957	180	5:21:44.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	260
126958	180	5:23:13.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	260
126959	180	5:24:42.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	260
126960	180	5:25:48.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	320
126961	180	5:27:17.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	320
126962	180	5:28:46.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	320
126963	180	5:30:15.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	380
126964	180	5:31:44.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	380
126965	180	5:33:13.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	380
126966	180	5:34:19.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	460
126967	180	5:35:48.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	460
126968	180	5:37:17.0	LTC_BLEM_GAIN_500	3	(40K)	FULL	460
126836	180	1:11:35.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	0
126837	180	1:13:4.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	0
126838	180	1:14:33.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	0
126840	180	1:17:31.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	5
126841	180	1:19:0.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	5
126875	180	2:11:31.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	5
126842	180	1:20:6.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	30
126843	180	1:21:35.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	30
126844	180	1:23:4.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	30
126845	180	1:24:33.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	60
126846	180	1:26:2.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	60
126847	180	1:27:31.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	60
126849	180	1:30:6.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	80
126850	180	1:31:35.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	80
126876	180	2:12:37.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	80
126852	180	1:34:33.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	150
126853	180	1:36:2.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	150
126877	180	2:14:6.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	150
126854	180	1:37:8.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	260
126855	180	1:38:37.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	260
126856	180	1:40:6.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	260
126857	180	1:41:35.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	380
126858	180	1:43:4.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	380
126859	180	1:44:33.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	380
126861	180	1:47:8.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	460
126862	180	1:48:37.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	460
126878	180	2:15:12.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	460
126863	180	1:50:6.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	560
126864	180	1:51:35.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	560
126865	180	1:53:4.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	560
126866	180	1:54:10.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	680
126867	180	1:55:39.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	680
126868	180	1:57:8.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	680
126869	180	1:58:37.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	820
126871	180	2:1:35.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	820

image	day	eventtime	observation	gain		mode	exp
126879	180	2:16:18.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	820
126872	180	2:2:41.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	1000
126873	180	2:4:10.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	1000
126874	180	2:5:39.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	1000
126880	180	2:17:24.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	1000
126881	180	2:18:53.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	1000
126882	180	2:20:22.0	LTC_BLEM_GAIN_501	2	(100K)	FULL	1000
126970	180	6:55:58.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	0
126971	180	6:57:2.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	0
126972	180	6:58:6.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	0
126973	180	6:59:10.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	5
126974	180	7:0:14.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	5
126975	180	7:1:18.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	5
126976	180	7:1:57.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	35
126977	180	7:3:1.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	35
126978	180	7:4:5.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	35
126979	180	7:5:9.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	50
126980	180	7:6:13.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	50
126981	180	7:7:17.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	50
126982	180	7:8:0.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	70
126983	180	7:9:4.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	70
126984	180	7:10:8.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	70
126985	180	7:11:12.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	150
126986	180	7:12:16.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	150
126987	180	7:13:20.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	150
126988	180	7:13:59.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	220
126989	180	7:15:3.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	220
126990	180	7:16:7.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	220
126991	180	7:17:11.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	320
126992	180	7:18:15.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	320
126993	180	7:19:19.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	320
126994	180	7:20:2.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	380
126995	180	7:21:6.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	380
126996	180	7:22:10.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	380
126997	180	7:23:14.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	460
126998	180	7:24:18.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	460
126999	180	7:25:22.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	460
127000	180	7:26:5.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	560
127001	180	7:27:9.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	560
127002	180	7:28:13.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	560
127003	180	7:29:17.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	680
127004	180	7:30:21.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	680
127005	180	7:31:25.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	680
127006	180	7:32:6.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	820
127007	180	7:33:10.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	820
127008	180	7:34:14.0	LTC_BLEM_GAIN_502	1	(400K)	SUM2	820
127116	183	6:29:40.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	0
127118	183	6:31:22.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	0
127120	183	6:33:4.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	5
127121	183	6:33:55.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	5
127122	183	6:34:23.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	15
127124	183	6:36:5.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	15
127126	183	6:37:47.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	25
127127	183	6:38:38.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	25
127128	183	6:39:8.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	30
127130	183	6:40:50.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	30
127132	183	6:42:32.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	70
127133	183	6:43:23.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	70
127134	183	6:43:53.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	120
127136	183	6:45:35.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	120
127138	183	6:47:17.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	150
127139	183	6:48:8.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	150
127140	183	6:48:36.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	180
127142	183	6:50:18.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	180
127144	183	6:52:0.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	260
127145	183	6:52:51.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	260
127146	183	6:53:19.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	320
127148	183	6:55:1.0	LTC_BLEM_GAIN_503	0	(1400K)	SUM4	320
126883	180	2:47:22.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	0
126884	180	2:48:51.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	0
126885	180	2:50:20.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	0
126886	180	2:51:49.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	5
126887	180	2:53:18.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	5
126888	180	2:54:47.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	5
126889	180	2:55:53.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	30
126890	180	2:57:22.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	30
126891	180	2:58:51.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	30
126892	180	3:0:20.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	60

image	day	eventtime	observation	gain		mode	exp
126893	180	3:1:49.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	60
126894	180	3:3:18.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	60
126895	180	3:4:24.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	80
126923	180	4:23:39.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	80
126928	180	4:32:55.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	80
126898	180	3:8:51.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	150
126899	180	3:10:20.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	150
126924	180	4:25:8.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	150
126902	180	3:14:36.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	260
126903	180	3:16:5.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	260
126925	180	4:26:14.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	260
126904	180	3:17:34.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	380
126905	180	3:19:3.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	380
126906	180	3:20:32.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	380
126907	180	3:21:38.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	460
126908	180	3:23:7.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	460
126929	180	4:34:1.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	460
126910	180	3:26:5.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	560
126911	180	3:27:34.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	560
126912	180	3:29:3.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	560
126913	180	3:30:9.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	680
126914	180	3:31:38.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	680
126915	180	3:33:7.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	680
126917	180	3:36:5.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	820
126918	180	3:37:34.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	820
126927	180	4:28:36.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	820
126919	180	3:38:40.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	1000
126920	180	3:40:9.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	1000
126921	180	3:41:38.0	LTC_BLEM_GAIN_504	2	(100K)	FULL	1000
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129873	194	13:37:20.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	0
129874	194	13:38:49.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	0
129875	194	13:40:18.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	0
129876	194	13:41:48.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	5
129877	194	13:43:17.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	5
129878	194	13:44:46.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	5
129879	194	13:45:51.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	15
129880	194	13:47:20.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	15
129881	194	13:48:49.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	15
129882	194	13:50:19.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	30
129883	194	13:51:48.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	30
129884	194	13:53:17.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	30
129885	194	13:54:22.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	40
129886	194	13:55:51.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	40
129887	194	13:57:20.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	40
129888	194	13:58:50.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	90
129889	194	14:0:19.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	90
129912	194	14:39:33.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	90
129891	194	14:2:53.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	120
129892	194	14:4:22.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	120
129893	194	14:5:51.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	120
129894	194	14:7:21.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	180
129895	194	14:8:50.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	180
129896	194	14:10:19.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	180
129897	194	14:11:24.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	220
129898	194	14:12:53.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	220
129900	194	14:15:52.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	260
129901	194	14:17:21.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	260
129902	194	14:18:50.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	260
129914	194	14:45:6.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	260
129903	194	14:19:55.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	320
129904	194	14:21:24.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	320
129905	194	14:22:53.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	320
129906	194	14:24:23.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	380
129907	194	14:25:52.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	380
129908	194	14:27:21.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	380
129909	194	14:28:32.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	460
129910	194	14:30:1.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	460
129911	194	14:31:30.0	LTC_BLEM_GAIN_510	3	(40K)	FULL	460
130102	195	3:8:13.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	0
130103	195	3:9:42.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	0
130104	195	3:11:11.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	0
130106	195	3:14:9.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	5
130107	195	3:15:38.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	5
130141	195	4:13:6.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	5
130108	195	3:16:44.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	30
130109	195	3:18:13.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	30

image	day	eventtime	observation	gain		mode	exp
130110	195	3:19:42.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	30
130111	195	3:21:11.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	60
130112	195	3:22:40.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	60
130113	195	3:24:9.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	60
130114	195	3:25:15.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	80
130116	195	3:28:13.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	80
130142	195	4:14:12.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	80
130118	195	3:31:11.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	150
130119	195	3:32:40.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	150
130143	195	4:15:41.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	150
130120	195	3:33:46.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	260
130121	195	3:35:15.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	260
130122	195	3:36:44.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	260
130123	195	3:38:13.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	380
130124	195	3:39:42.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	380
130125	195	3:41:11.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	380
130126	195	3:42:17.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	460
130127	195	3:43:46.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	460
130128	195	3:45:15.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	460
130129	195	3:46:44.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	560
130130	195	3:48:13.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	560
130131	195	3:49:42.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	560
130132	195	3:50:48.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	680
130133	195	3:52:17.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	680
130144	195	4:16:47.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	680
130135	195	3:55:15.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	820
130137	195	3:58:13.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	820
130145	195	4:18:16.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	820
130139	195	4:0:48.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	1000
130140	195	4:2:17.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	1000
130146	195	4:19:22.0	LTC_BLEM_GAIN_511	2	(100K)	FULL	1000
130147	195	8:48:58.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	0
130148	195	8:50:27.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	0
130149	195	8:51:56.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	0
130150	195	8:53:26.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	5
130151	195	8:54:55.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	5
130152	195	8:56:24.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	5
130153	195	8:57:29.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	30
130154	195	8:58:58.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	30
130186	195	9:53:17.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	30
130156	195	9:1:56.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	60
130157	195	9:3:26.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	60
130158	195	9:4:55.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	60
130159	195	9:6:0.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	80
130161	195	9:8:58.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	80
130187	195	9:54:23.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	80
130162	195	9:10:28.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	150
130163	195	9:11:57.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	150
130164	195	9:13:26.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	150
130166	195	9:16:0.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	260
130188	195	9:55:29.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	260
130189	195	9:56:58.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	260
130168	195	9:18:59.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	380
130170	195	9:21:57.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	380
130171	195	9:23:2.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	460
130172	195	9:24:31.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	460
130173	195	9:26:0.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	460
130174	195	9:27:30.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	560
130175	195	9:28:59.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	560
130176	195	9:30:28.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	560
130177	195	9:31:33.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	680
130179	195	9:34:31.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	680
130190	195	9:58:4.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	680
130180	195	9:36:1.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	820
130181	195	9:37:30.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	820
130182	195	9:38:59.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	820
130183	195	9:40:4.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	1000
130184	195	9:41:33.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	1000
130185	195	9:43:2.0	LTC_BLEM_GAIN_512	2	(100K)	FULL	1000
130191	195	10:38:4.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	0
130192	195	10:39:8.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	0
130193	195	10:40:13.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	0
130194	195	10:41:17.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	5
130195	195	10:42:21.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	5
130196	195	10:43:25.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	5
130197	195	10:44:3.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	35
130198	195	10:45:7.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	35
130199	195	10:46:11.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	35

image	day	eventtime	observation	gain		mode	exp
130200	195	10:47:16.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	50
130201	195	10:48:20.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	50
130202	195	10:49:24.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	50
130203	195	10:50:6.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	70
130204	195	10:51:10.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	70
130205	195	10:52:14.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	70
130206	195	10:53:19.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	150
130207	195	10:54:23.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	150
130208	195	10:55:27.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	150
130209	195	10:56:5.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	220
130210	195	10:57:9.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	220
130211	195	10:58:13.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	220
130212	195	10:59:18.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	320
130213	195	11:0:22.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	320
130214	195	11:1:26.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	320
130215	195	11:2:8.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	380
130216	195	11:3:12.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	380
130217	195	11:4:16.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	380
130218	195	11:5:21.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	460
130219	195	11:6:25.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	460
130220	195	11:7:29.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	460
130221	195	11:8:11.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	560
130222	195	11:9:15.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	560
130223	195	11:10:19.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	560
130224	195	11:11:24.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	680
130225	195	11:12:28.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	680
130226	195	11:13:32.0	LTC_BLEM_GAIN_513	1	(400K)	SUM2	680
130230	195	12:26:10.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	0
130231	195	12:27:1.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	0
130232	195	12:27:52.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	0
130233	195	12:28:44.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	5
130234	195	12:29:35.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	5
130235	195	12:30:26.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	5
130236	195	12:30:53.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	15
130237	195	12:31:44.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	15
130238	195	12:32:35.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	15
130239	195	12:33:27.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	25
130240	195	12:34:18.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	25
130241	195	12:35:9.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	25
130242	195	12:35:38.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	30
130243	195	12:36:29.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	30
130244	195	12:37:20.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	30
130245	195	12:38:12.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	70
130246	195	12:39:3.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	70
130247	195	12:39:54.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	70
130248	195	12:40:23.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	120
130249	195	12:41:14.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	120
130250	195	12:42:5.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	120
130251	195	12:42:57.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	150
130252	195	12:43:48.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	150
130253	195	12:44:39.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	150
130254	195	12:45:6.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	180
130255	195	12:45:57.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	180
130256	195	12:46:48.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	180
130257	195	12:47:40.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	260
130258	195	12:48:31.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	260
130259	195	12:49:22.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	260
130260	195	12:49:49.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	320
130261	195	12:50:40.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	320
130262	195	12:51:31.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	320
130263	195	12:52:23.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	380
130264	195	12:53:14.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	380
130265	195	12:54:5.0	LTC_BLEM_GAIN_514	0	(1400K)	SUM4	380