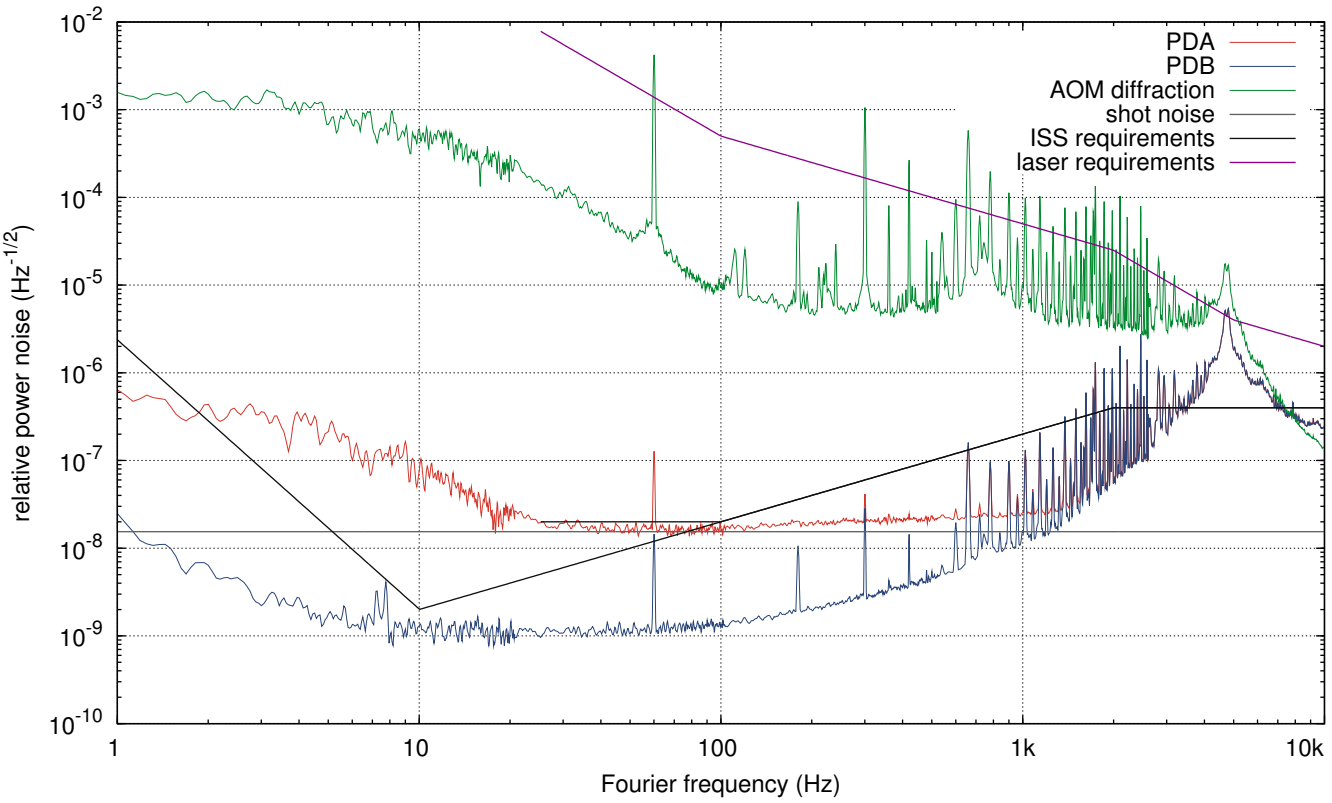
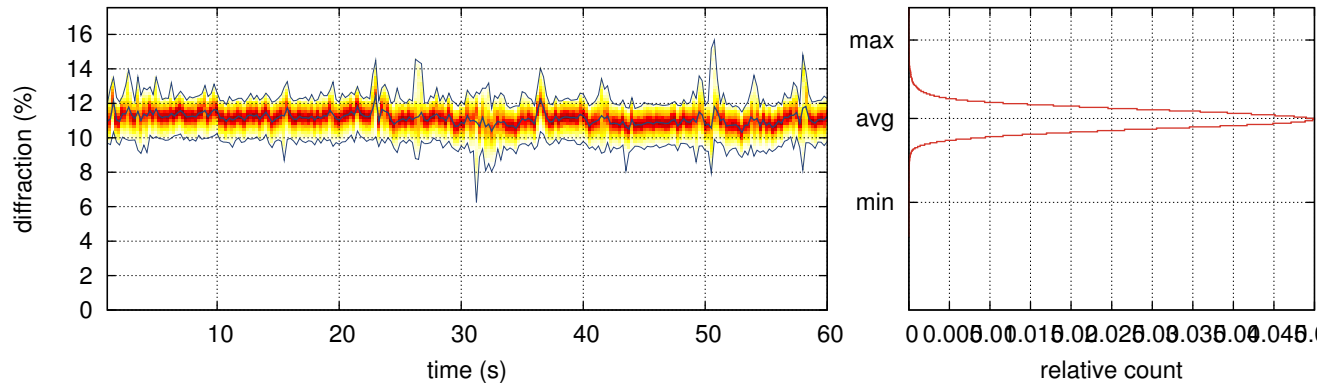
ISS – first loop relative power noise

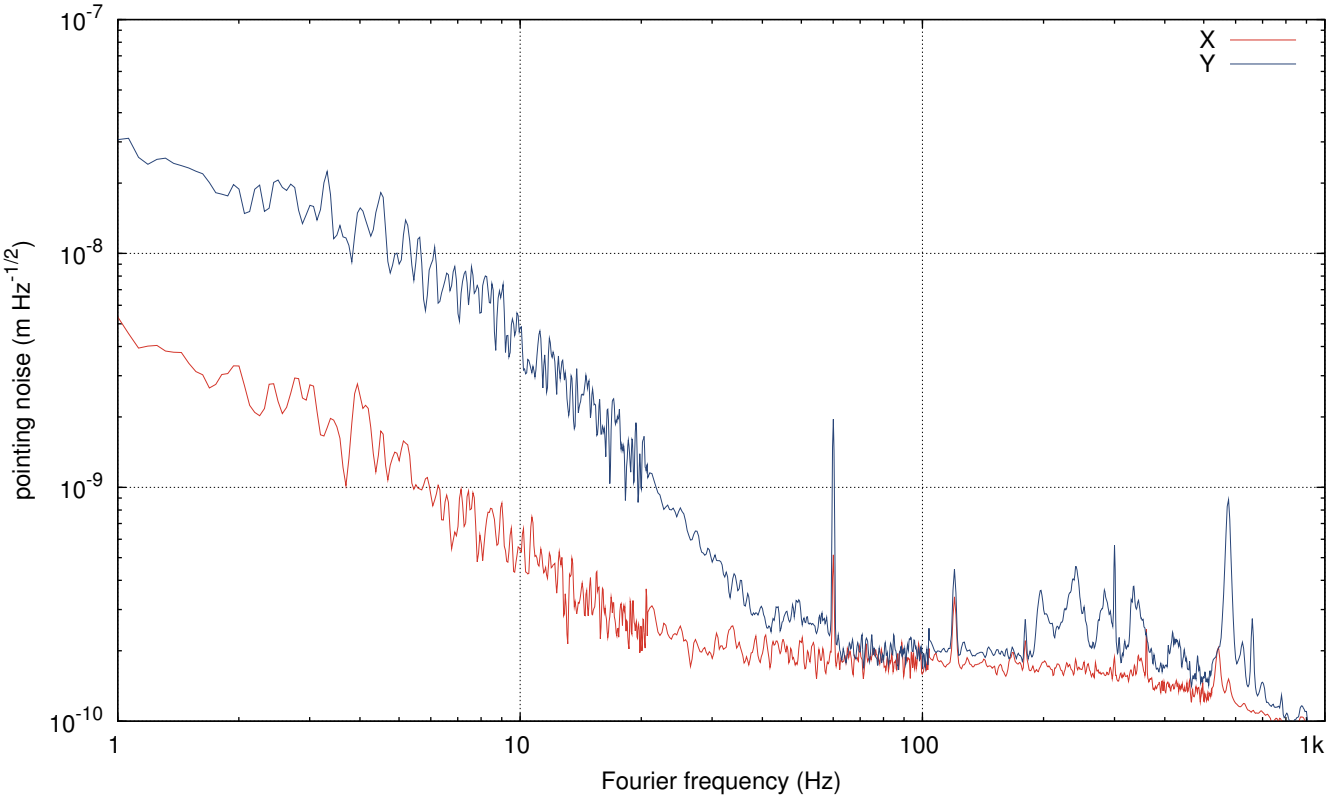
noisereport

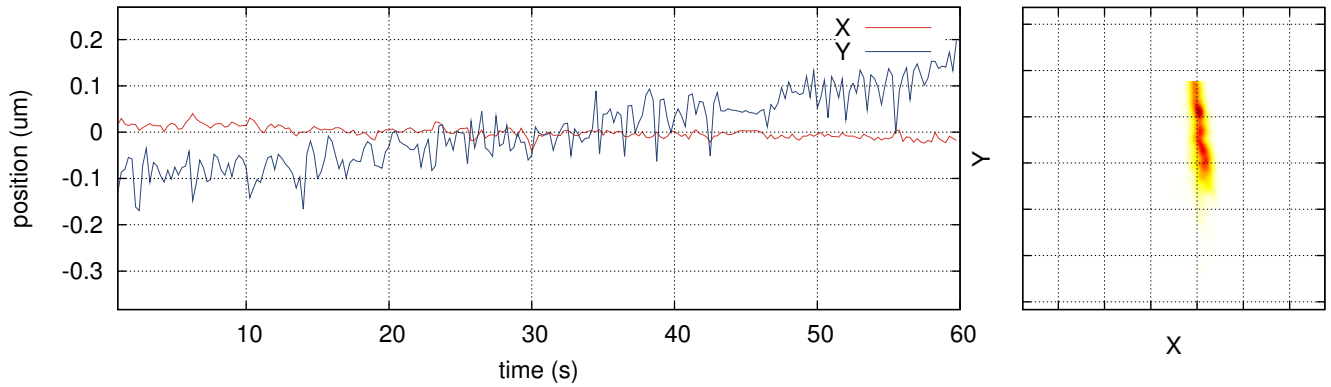




POWER STABILIZATION	
Measurement:	60 s = 1.0 min, 05. Feb 2013 12:21 PST
Stabilization:	first loop closed, integrator on; second loop injection off
Reference signal:	-1.794 V
First-loop gain:	7.0 V
Last saturation event:	0d 0h 3m
Average AOM diffraction:	11.12%
Diffraction signal range:	6.25%. . .15.67% (9.42% peak-to-peak, 32768 Hz samplingrate)

POWER NOISE		
	Photodiode A (PDA)	Photodiode B (PDB)
Average DC signal:	8.813 V	9.053 V
FILT signal range:	1.636 V. . .1.995 V (0.010 V_{rms})	1.683 V. . .2.053 V (0.010 V_{rms})
FILT samplingrate:	32768 Hz	32768 Hz
Photocurrent:	2.7 mA	2.7 mA
Relative shot noise level:	1.10e-08 $Hz^{-1/2}$	1.08e-08 $Hz^{-1/2}$





POSITION FLUCTUATIONS	
X position:	237.306 ± 0.014 um, 237.232 um . . . 237.375 um
Y position:	-4.134 ± 0.085 um, -4.517 um . . . -3.864 um
Samplingrate:	32768 Hz, 32768 Hz

D A Q	
Measurement duration:	60 s = 1.0 min
Measurement start:	05. Feb 2013 12:21 PST (05. Feb 2013 20:21 UTC, 1044130889 GPS)
NDS:	h1nds1:8088 (v12r0)
User:	psl@operator2
Channels:	H1:PSL-ISS_PDA_OUT 32768 Hz, H1:PSL-ISS_PDB_OUT 32768 Hz, H1:PSL-ISS_DIFFRACTION_OUT 32768 Hz, H1:PSL-ISS_QPD_DX_OUT 32768 Hz, H1:PSL-ISS_QPD_DY_OUT 32768 Hz, H1:PSL-ISS_LOOP_STATE_OUTPUT 16 Hz, H1:PSL-ISS_REFSIGNAL_MON_OUTPUT 16 Hz, H1:PSL-ISS_GAIN 16 Hz, H1:PSL-ISS_SECONDLOOP_CLOSED 16 Hz, H1:PSL-ISS_SAT_MIN 16 Hz, H1:PSL-ISS_SAT_HOUR 16 Hz, H1:PSL-ISS_SAT_DAY 16 Hz
Raw data:	rawdata.zip (attached to this .pdf file, use Adobe Reader)
Calibration:	default.cali (embedded), 01. Jan 1970 00:00 UTC
Report source files:	report.zip (attached to this .pdf file, use Adobe Reader)
Program:	iss_rpn.py v0.6, Patrick Kwee, patrick.kwee@aei.mpg.de

I N F O
Measurement method: The power noise downstream of the PMC is measured with two low-noise 2 mm InGaAs photodetectors. One of the photodetectors is used as sensor in the ISS first feedback control loop. The signal to the AOM driver is used to estimate the free-running power noise of the laser system.
no comment