



“Astrowatch” at LIGO Hanford Observatory

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Background

- Astrowatch
 - » Program to archive data from H1 and/or H2 during stretches when commissioning activities do not disable machines
 - » Opportunistic coverage of times when an astrophysically notable event might occur
- “Better is the enemy of Good”
 - » Require that program cannot significantly impede commissioning
 - » Means that data will not be as “nice” as during science runs, but will be better than nothing.
 - » “Notable event” might not be noted for many months, so need simple, automated archiving
- Progress since inception (Nov04)
- Can we be more ambitious?

Astowatch implementation to date

- Control room coverage during commissioning was 18-19 hrs/day weekdays, less on weekends
- Small effort made to leave H1 and H2 in best state overnight for unmolested operation, without significant loss of commissioning time (< 1 hr)
- If a detector is free running during day, we will archive long stretches of locking, even though “science-mode” conditions do not apply
 - » May have vehicles along arms or people on technical slab
 - » If once-a-career event happens, we will take the data we have, even if it is not what we wish we had

Statistics

(compiled by Ben Johnson)

Nov 01 2004 00:00:00 UTC - Dec 01 2004 00:00:00 UTC

Duty cycle for H1: 16%

Duty cycle for H2: 13%

Duty cycle for H1H2coinc: 8%

Duty cycle for H1H2union: 21%

Dec 01 2004 00:00:00 UTC - Jan 01 2005 00:00:00 UTC

Duty cycle for H1: 43%

Duty cycle for H2: 13%

Duty cycle for H1H2coinc: 11%

Duty cycle for H1H2union: 45%

Jan 01 2005 00:00:00 UTC - Feb 01 2005 00:00:00 UTC

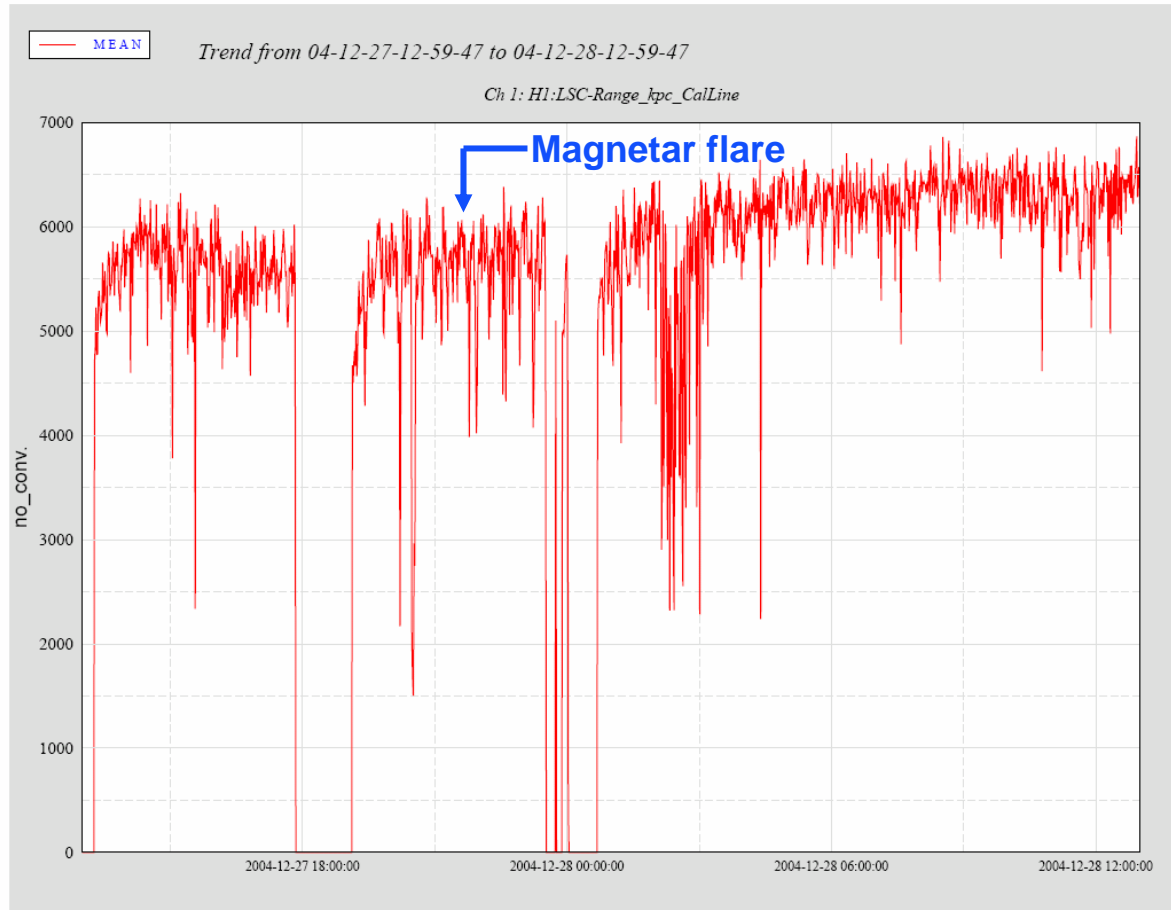
Duty cycle for H1: 48%

Duty cycle for H2: 43%

Duty cycle for H1H2coinc: 31%

Duty cycle for H1H2union: 60%

Test Case: Magnetar Flare of 27Dec04



Can we be more ambitious?

- How about online analysis of this data?
 - » Should follow the same rule: analysis should minimally impact progress of between-science-run activities
 - » Remember: “Better is the enemy of good.” Can we produce a continuous product that is good, while we strive for something better?
 - » Efficiency: What do we really want? Many ways to analyze a little data or a few good ways to analyze a lot of data?
- What commissioning/science model best maximizes science output?
 - » Should we rethink the run model?
 - » Is current “epochal” model better than a “shift” model?