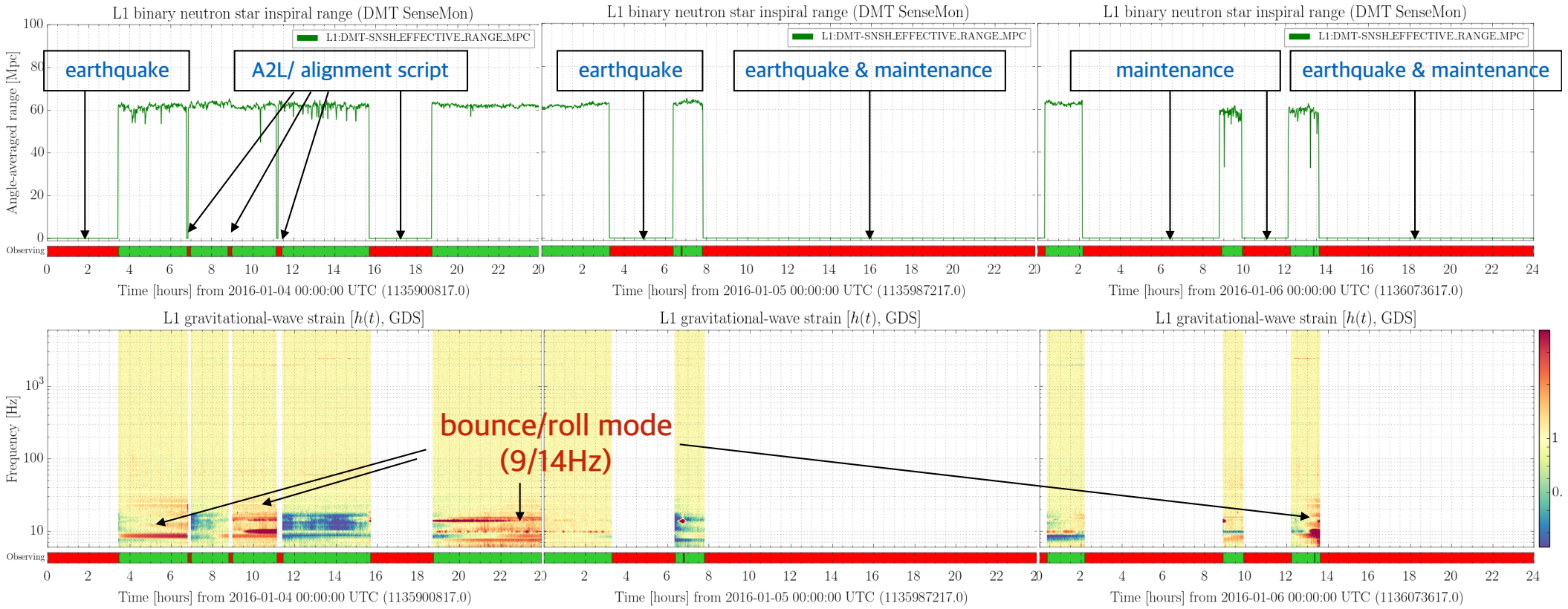
# DQ Shift for LLO 1/4-1/6

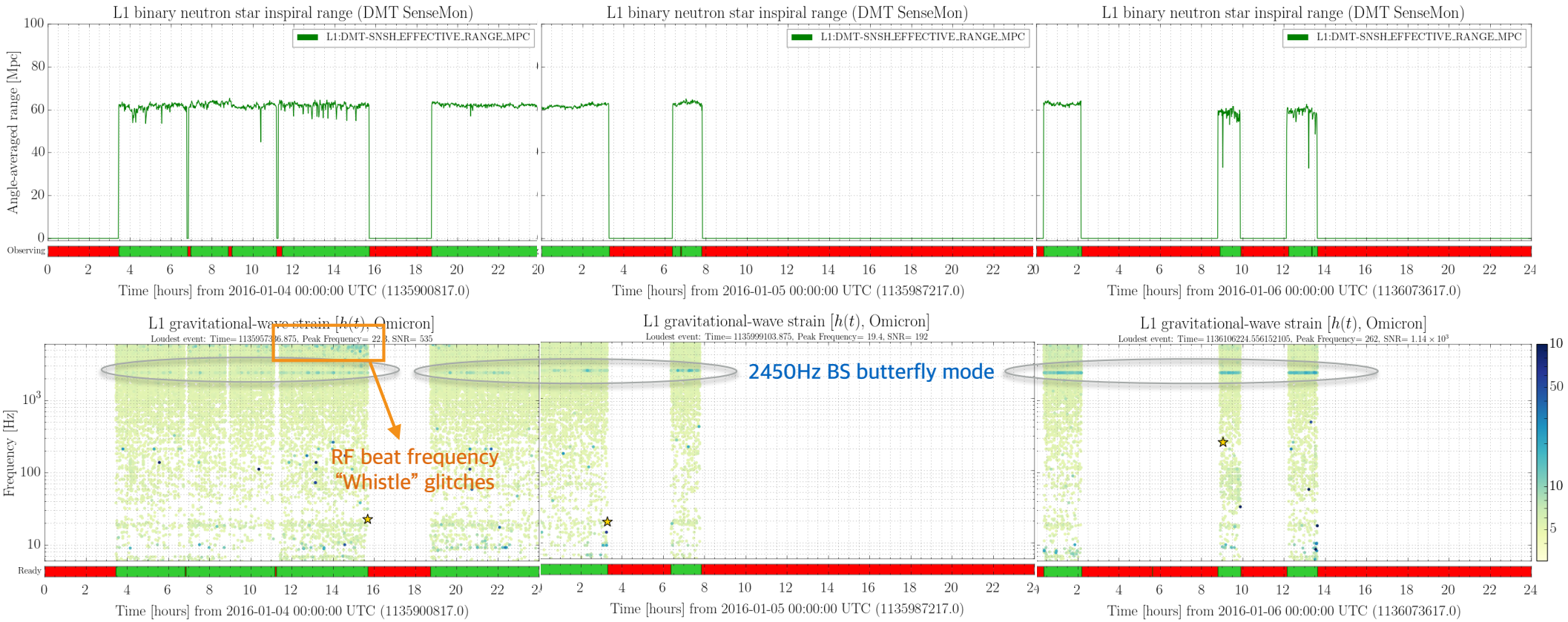
JOHN OH (KGWG & NIMS)

# Duty Cycle & Bounce/Roll Mode in Suspension System



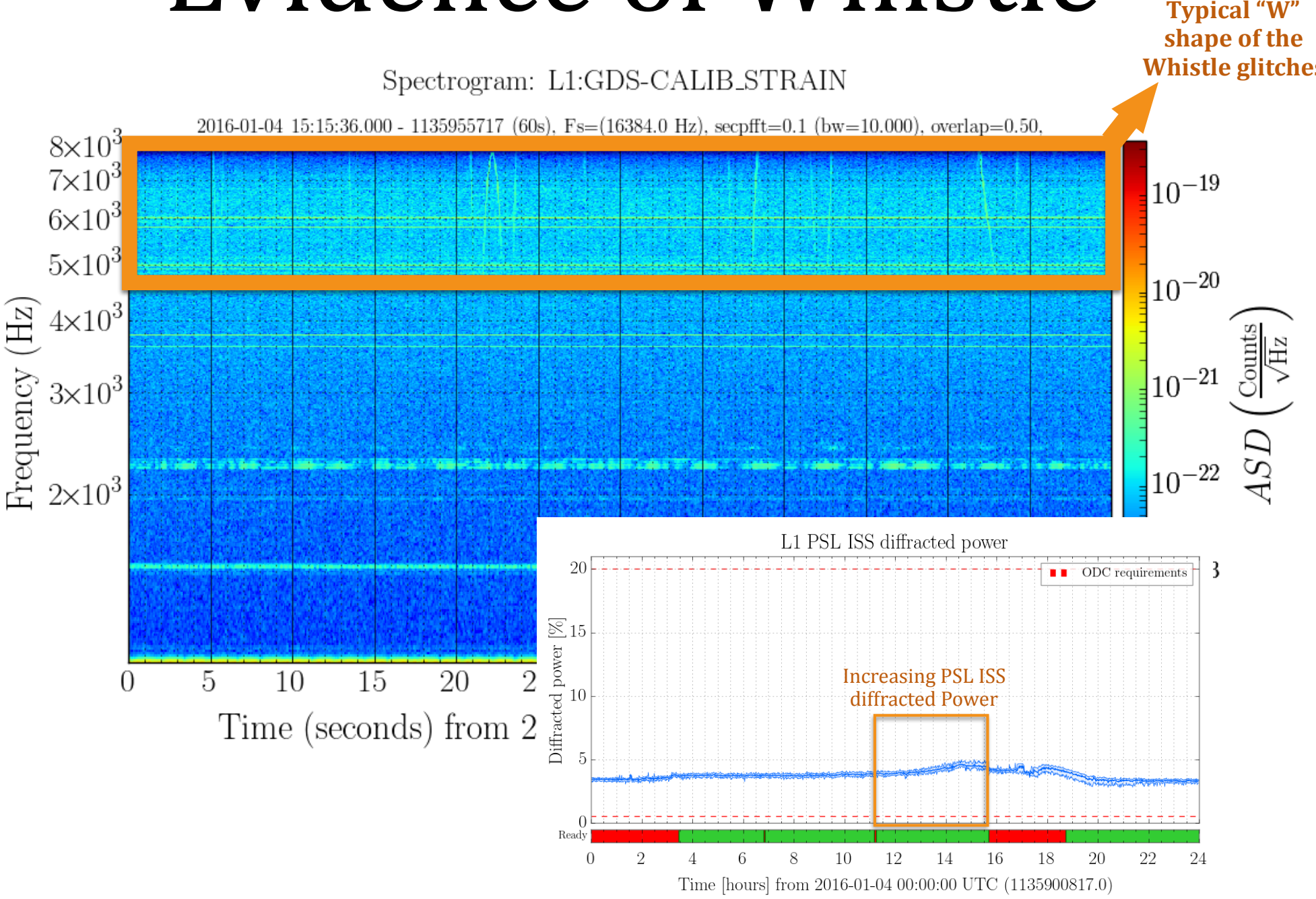

- For three days, overall duty cycle is 35.7%. (Mon. - 70.1%, Tue. - 19.5%, Wed. - 17.4%)
- IFO had down modes due to earthquake, maintenance for adjusting script for bounce/roll modes.
- Average BNS inspiral range was around 60Mpc.

# BS butterfly mode & Whistles



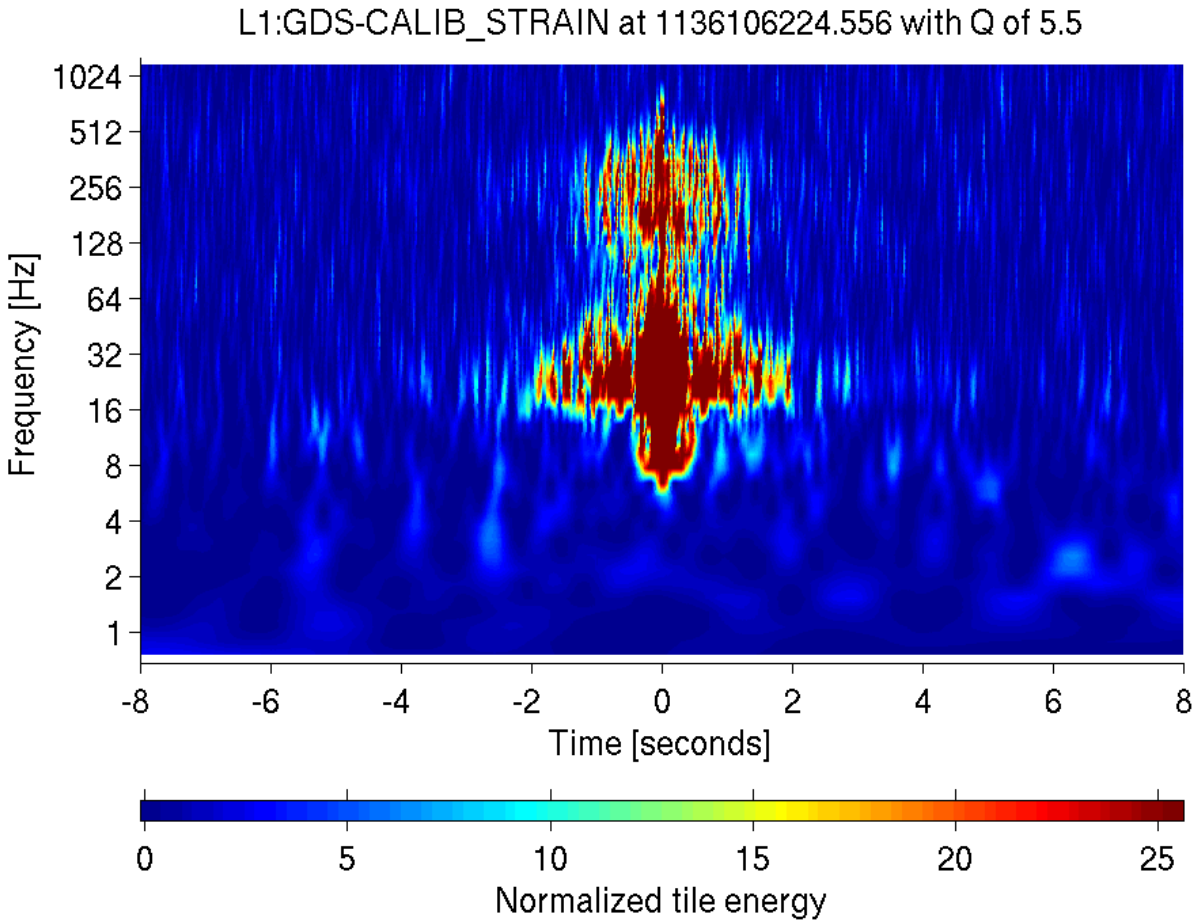

- Overall low noise observing modes in low frequency bands.
- 2450 Hz BS butterfly mode glitches are shown in full observing days.
- Whistle glitches are shown above 5kHz from 12:00 - 16:00 UTC on Monday. The origin of the "whistle" is due to the microseism modes of the ground motion and winds.

# Evidence of Whistle



# Unknown “Range-killer Glitches”

# Thunderbird Glitch




Diving Thunderbird

- Due to the ETMY saturation
- Broadband vertical glitch shown in Rayleigh statistic spectrogram between 60-150Hz
- Drop BNS range unto 20-30Mpc.