



Update on Event in ObsID 0x50002C6B?

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with contributions from

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What do we know

- An unusual event was observed with SPIRE in ObsID 0x50002C6B at BBID A103001D (OD 228, 28-Dec-2009). This is a large parallel mode photometer scan at slow speed.
- All SPIRE detectors that see the telescope show a double peak of 1-1.8 Jy over 1.7 sec.
- An electronic effect due to high energy radiation seems unlikely as no dark, thermistor or resistor channel show any reaction at the same time.
- A sudden movement of the chopper mirror, or switching on of PCAL or other events in the instrument are unlikely as no NHK channel shows any activity at the time.
- The light source is out of focus, as all detectors are evenly illuminated at the same time. A source location would be likely one of the mirrors.
- A meteorite impact into the primary mirror would be a potential explanation.
- A jitter in the pointing is not observed but the mass of Herschel may be too large for an effect and there are enough impact angles resulting in zero torque.
- The 1.7 sec double peak in flux could be from the dissipating heat of an impact.
- A calculation of the expected size of a “black” spot or crater on the mirror yields about 3mm.

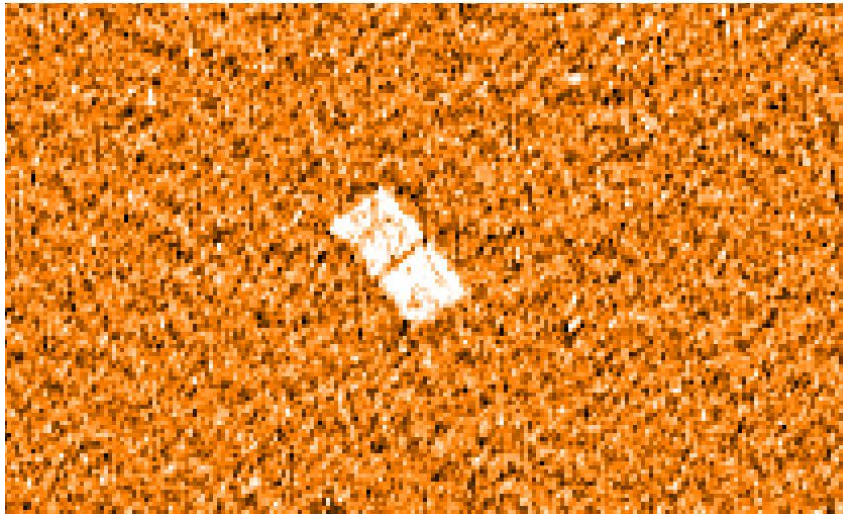


New Evidence

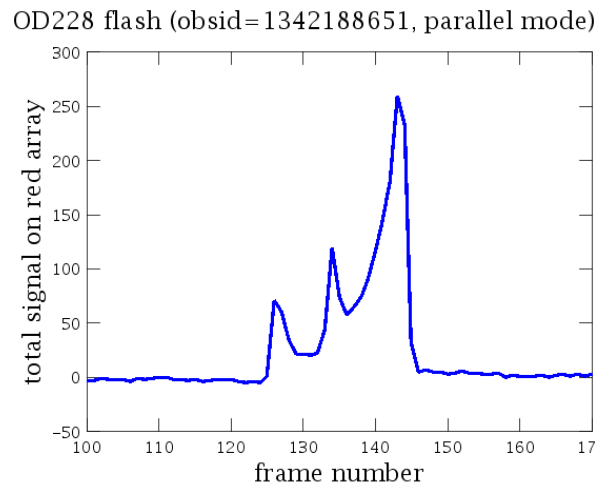
- The event in Dec 2009 didn't go entirely unnoticed. An SPR SPIRE-2397 was raised with the title "Multiple detector jumps" on 18-Feb-2010. It was reassigned then and put on hold in June assuming it was related to the known jump events.
- Temperature HK data from the satellite are recorded only every 30 min while instruments are observing. No obvious changes at the time of the event was seen in any of the channels.



PACS saw the Event too!



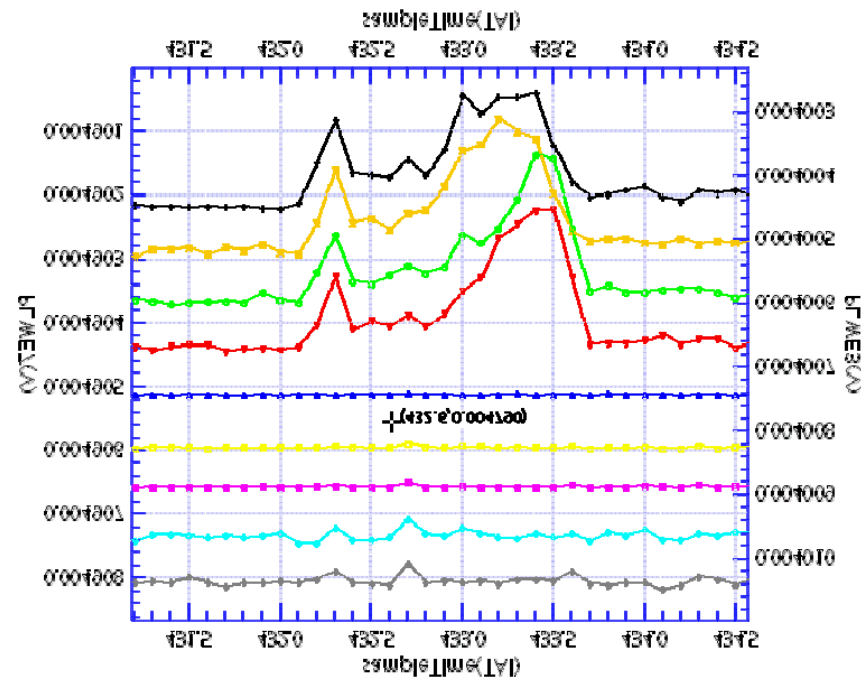
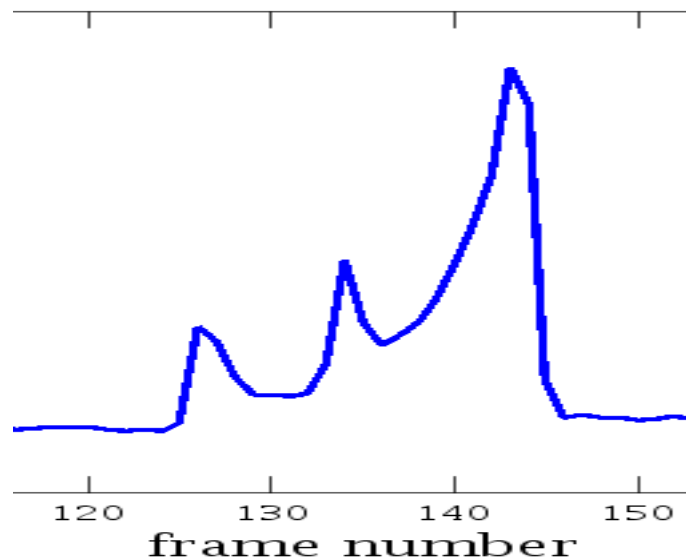
- The PACS map of the same ObsID shows an imprint of the RED array.
- The exact time still needs to be figured out (waiting for PACS input).
- PACS observes at a frame rate of 10 Hz which leads to an event duration of about 2 sec.





PACS Timeline

- PACS observed in the same OBSID a flash of the same duration of about 2 sec.
- In contrast to the SPIRE event this timeline shows three peaks.
- Exact timing comparison is needed.





Summary

- More evidence that something happened outside of the spacecraft.
- SPIRE and PACS see event of similar duration.
- Timeline signatures are slightly different (2 peaks/3 peaks)
- Still waiting for some additional quantitative data.
- A likely explanation remains to be a micrometeoroid impact.
- An attack by an alien force using technologically highly developed nano-missiles as suspected by the SPIRE PI can not be ruled out.