



# NDSF Upgrades HDTV Camera Study



## Introduction

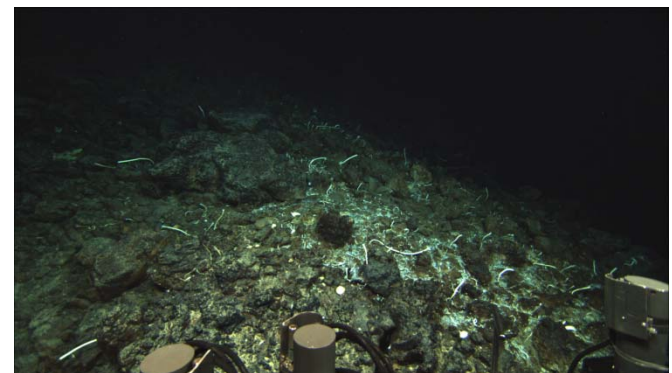
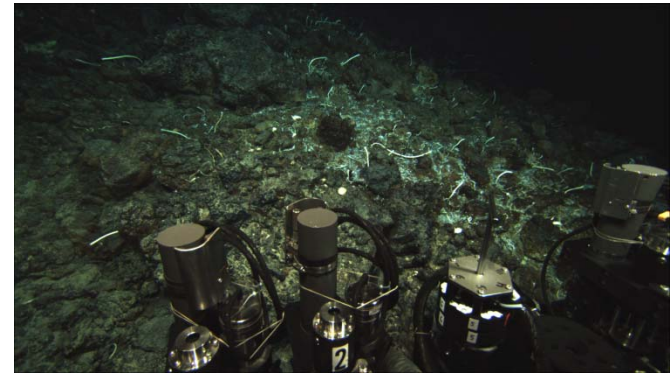
- New Jason HDTV has received good reviews in general (see prior debriefs and examples of “eye candy” from Jan 2012 cruise available at break)
- But two specific “short-coming” issues raised in recent debriefs :
  - camera is light hungry in the far-field
  - camera does not zoom in as far as biologists would like
- Both issues raised in comparison to the new mini-Zeus HD camera now installed for pilots’ use.
- Evaluation conducted during Jan 2012 engineering dive time *after* 2<sup>nd</sup> tranche of new LED lights had been added to *Jason*



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- 1) By-passed standard monitors and set up identical color-calibrated 7.4" OLED monitors at the rear of the van to ensure objective like-for-like comparisons.
- 2) Zoomed both cameras in to their fullest extent to compare what was the smallest feature we could resolve.
- 3) Zoomed both cameras out to their full extent to see which had broadest field of view and light sensitivity at outer range.





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## **Conclusions**

- 1) The Science Camera was clearly superior over the Pilot Camera in terms of imaging quality & aesthetics when in the “sweet spot” range (important for science communication, post-cruise outreach efforts)
- 2) The Pilot Camera could see more detail in the periphery of the field view, on a like-for-like basis with the same lighting when zoomed all the way out - used extensively for this in subsequent reconnaissance work
- 3) The Pilot Camera was also more useful when zoomed all the way in to study the fine detail of (vent) organisms – used to help select between two species of (retracted) tube-worm during subsequent sampling operations (Still capture from the pilot camera added to vehicle’s Science capabilities)



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## Implications for the next *Alvin* Science Camera

- InSite have demonstrated added capabilities (maximum zoom, lower light demand) in their Mini-Zeus camera that would be valuable for scientists
- Hence, we are now in discussions with this company to procure a new Science Camera 2 for *Alvin* that will build on the same optical capabilities as the Mini-Zeus, with a 12 MPixel still imaging capability as well as HD video
- For *Alvin* this camera will be equipped with a Perspex hemispherical dome to ensure it is suitable for use on an HOV
- For future consideration will be whether it will also be desirable to procure a similar camera (but with a glass dome?) for *Jason* (e.g. to retire the DSC)