SBG Community Webinar

May 27, 2020

Chat questions:
Answers:
Comments:

from Joseph D. Ortiz to Everyone: 10:18 AM

Was the lack of VSWIR responses with respect to w-3a due to lack of use of that band range for that topic or the 70% cutoff threshold? (Slide 7)

from Dave Schimel to Everyone: 10:24 AM

we interpret w3a which is mainly aimed at atmospheric measurements as creating objectives for albedo and ET at 100 x 100 km resolution, measurements already described under E objectives, and we chose not to re-specify redundantly.

from Joseph D. Ortiz to Everyone: 10:23 AM

Solving the VSIWR latency through the use of a constellation with poiting and mow-the-lawn on different platforms is a good plan.

from Constantine Lukashin to Everyone: 10:23 AM

What is confidence level for the accuracy < 10% requirement ? k=1 or k=2 ? (Slide 11)

from Constantine Lukashin to Everyone: 10:29 AM

Please ignore my question... The recommended < 5% accuracy in VSWIR would be k=1.

from Zhuoting Wu (USGS) to Everyone: 10:23 AM

Is the mid-wave IR band (4 micron) for night-time use only? Does it apply to day-time use too?

from Simon Hook to Kerry-Anne Cawse-Nicholson (privately): 11:16 AM

Yes primary at night but can be used during the day for fires

Glynn: can compute LST during daytime as well.
Kerry: thermal will acquire data daytime and nighttime

from David Ardila to Everyone: 10:23 AM

Are these slides going to be available?

from Ryan Pavlick to Everyone: 10:24 AM

The slides are available here: https://sbg.jpl.nasa.gov/doc_links/2020-05-27-sbg-community-webinar-2

from Kevin Reath to Everyone: 10:26 AM

Wouldn't a 10.05 μm band center be partially obscured by the O3 absorption feature? What's the advantage of using this over, say 10.15μm?

from Glynn Hulley to Everyone: 10:30 AM

The O3 absorption only affects responses below about 9.8 micron. The proposed band at 10.15 could be used for feldspar/quartz discrimination and also sulfate aerosol/ash discrimination in volcanic plumes

from Glynn Hulley to Everyone: 10:37 AM

Kevin, correct. Not a change, but more a recommendation, which is if 6 bands or more are possible, then its recommended the 6th band would be at 10.15.

from Joseph D. Ortiz to Everyone: 10:28 AM

What will the relative errors in surface temperature be for the designs still under consideration? Does the <5% value for reflectance apply there or a smaller value?

from Glynn Hulley to Everyone: 10:31 AM

The TIR A/B current designs should meet the 1 K RMSE accuracy if NEdT of the sensor is <0.25 K.

from Joseph D. Ortiz to Everyone: 10:32 AM

Thanks for the reply Glynn. That would be excellent in my opinion.

from Joseph D. Ortiz to Everyone: 10:54 AM

Is the lack of constellation options on the Feb. 2020 plot based on an assumption that constellations imply external funding from industry or other nations?

from Ryan Pavlick to Everyone: 10:55 AM

Some of the hybrid concepts include constellations

from Joseph D. Ortiz to Everyone: 11:02 AM

Might international collaboration consider use of existing architecture that is in orbit or planned, or future close collaboration for purpose built craft designed to matching specifications developed by this SBG framework?

from Ryan Pavlick to Everyone: 11:02 AM

All of the above.

from Steven Ackleson to Kerry-Anne Cawse-Nicholson (privately): 11:15 AM

After the "final" design has been decided, how will a builder be selected?

Dave: This will depend on

from Norm Nelson to Everyone: 11:18 AM

Looking back to Ben's Slide 7, the target of <10% radiometric accuracy for VSWIR -- this is not sufficient for oceanic / coastal applications. Can this be improved?

Dave: don't take the 10% very seriously. Take the "less than" more seriously. Only snow albedo specified radiometric accuracy. So we included the 10% number for completeness, but we are aware it is insufficient for many applications.

Natasha: uncertainty quantification work that the modeling working group is carrying out.

from David Ardila to Everyone: 11:22 AM

What is the weight of short revisit times on the science weight?

Dave: Across the substantial number of objectives (>17), it was hard to say that any one of these parameters was (across the five science focus areas) more important than any of the others. In order to re-adress the science of SBG in a balanced way, we did not weight parameters against eachother. The highest weight Dave B showed was 8, which was the sum of unweighted parameters for both wavelength ranges. Short revisit is probably the most expensive to address. We are putting a lot of weight on

from chuanmin hu to Kerry-Anne Cawse-Nicholson (privately): 11:22 AM

On SNR versus RMSE uncertainties - Menghua Wang and the PACE team have done a lot of work in simulations. Have those been incorporated here? Chuanmin Hu

Ben:

from Gregory Halverson to Everyone: 11:23 AM

With the architecture options left, is there still a chance to get NIR & red co-incident to thermal?

Dave: co-locating the instruments on the same platform is actually the worst solution to the problem given the different swath widths.

from Vince Realmuto to Everyone: 11:24 AM

Are there specs on pointing/position accuracy (or knowledge of attitude, etc). Many of the TIR options are micro/cube sats, and do these platforms have sufficient pointing accuracy?

from David Bearden to Everyone: 11:26 AM

@Vince Yes, pointing accuracy/knowledge/stability are inputs into the design center studies. So if a platform can't provide what's needed, it would not close technically and wouldn't be carried forward.

from Steven Ackleson to Kerry-Anne Cawse-Nicholson (privately): 11:24 AM

Regarding SNR, it might be useful to define that value based on the the darkest target of interest -- deep, clear water. If we don't define the conditions that the SNR is comouted for, we don't know what it means.

Dave: we need to consider all five application areas, and will absolutely be considering SNR over both bright and dark targets.

from Steven Pestana to Everyone: 11:28 AM

Do the constellation or hybrid architectures considered include existing or already planned observation capabilities from other satellites?

from David Bearden to Everyone: 11:29 AM

In Phase 1 we assessed the "Program of Record" which includes existing and already planned capabilities. One example was Landsat which has some applicable capabilities

from Constantine Lukashin to Everyone: 11:29 AM

Do you consider VSWIR instrument's sensitivity to polarization ?

Dave: yes, we take polarization requirements very seriously.

from Tony Vodacek to Everyone: 11:29 AM

In a constellation might there be some relaxing of the +/-85 deg latitude for some of the platforms to improve revisit at lower latitudes?

Dave: Yes

from Gregory Halverson to Everyone: 11:31 AM

It seems like if it's possible to engineer TIR for a certain cross-track swath-width and cell size, it should be at least as possible to engineer NIR with the same dimensions.

Dave: It's not actually possible to engineer that, except for reducing the TIR. The available detectors limit this-new detector technology advances on a decadal pace and there are physics limits to swath width as well! Also, TIR wants to be in the PM, VSWIR in the AM, so there's a

huge science penalty to co-locating them. We may have a VNIR camera to fly with the TIR, but only if someone else pays.