

2023-02-13 DM-SST Agenda and Meeting Notes

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Time:

11:00 PT

Location

Browser	Room System	Phone Dial-in
Short : ls.st/dmsst Zoom: https://noirlab-edu.zoom.us/j/97839121776? pwd=K1JPeUpSMXVvSXJSa2xORGkyVk5zdz09 Zoom Meeting ID: 978 3912 1776 Zoom Password: 512314	Dial closest IP: 162.255.36.11 (east coast) and 162.255.37.11 (west coast) then use the Zoom meeting ID 978 3912 1776 as the dialing extension. For example: 978 3912 1776 @162.255.37.11 or: 162.255.37.11##978 3912 1776 Password: 512314	Dial-in numbers: +1 346 248 7799 (US Toll) +1 669 900 6833 (US Toll) Meeting ID: 936 2540 1560 International numbers available: https://globalini.zoom.us/j/97839121776

Attendees

- [Arun Kannawadi](#)
- [Leanne Guy](#)
- [Eric Bellm](#)
- [Jeffrey Carlin](#)
- [Steve Ritz](#)
- [Jim Bosch](#)
- [Colin Slater](#)
- [Keith Bechtol](#)
- [Eli Rykoff](#)
- [Matthew Becker](#)
- [Erin Sheldon](#)
- [Yusra AlSayyad](#)
- [Melissa Graham](#)
- [Robert Lupton](#)

Regrets

Discussion items

Item	Who	Pre-Meeting Notes	Notes and Action Items
Project /Science Updates	Leanne Guy	<ul style="list-style-type: none">• No PST meeting last week.• Week of August 21-25 is being targeted for the JSR this year• Week of 27 February is the DESC meeting and the JOR.• Reminder that the Call for Community Input into the Definition of the Roman Space Telescope's Core Community Surveys has a deadline of Friday 17 February• SAR266 – a small asteroid hit the atmosphere about 1m diameter was last night an hit the atmosphere 5hrs later, breaking up in the atmosphere close to Paris: https://earthsky.org/space/small-asteroid-impact-near-france-english-channel/ . This is only the 7th time that a meteor was discovered before impacting Earth. Meg/SSSC sent a mail to the PST pointing out that the 80hr embargo on images is problematic for planetary defence. There were discussions at LSST@Europe about an automated pathway in the case where an impactor with the potential to hit within < 80 hrs is identified	
Processing for weak lensing / DESC	Jim Bosch Matthew Becker	Discussion of processing needed to produce an Object catalog for DESC weak lensing studies. <ul style="list-style-type: none">• slides	JB: Always intended to take a contribution from the community for shear estimation - this is a presentation of a mature-state option. RHL: This work is optimal for weak shear but what about strong shear? We need to support all strong shear as well. Is metadetect good enough for them? Weak lensing looks at 1-2% added shear.

ES: In the regime of say 10% shear or less metadetect is probably OK - for a 10% shear you get a 1% bias due to the fact that the shear is not in the linear regime. Anything higher than that would require specialized code. In that case you have to go back and redo the processing and then the question become do you do the processing on cell-based coadds or some other dataset?

RHL: I think that a classic shape measurement on cell coadds will be fine

ES: All classic shape measurements will have this same limitation – if you go into the really strong lensing regime with the big arcs, specialized code is needed.

MB: The DESC has people working in clustering thinking about this so they might be able to provide input.

LPG: With cell-based coadds you remove images – this will impact the overall m5 coadded survey depth. Do you know how much?

MB: Not as much as you think it would. Bob has numbers for this,

AK: It's about a 5% loss, details depend on the size of the CCDs, how many satellite trails come through ..

JB: No matter what coadd technique we use there will be some loss - there might be a slight tradeoff between SNR and systematics.

SR: verified to what? and how many images were coadded?

MB: We verified to 10yr Rubin requirements, so better than 0.1% (at 3 sigma) in multiplicative bias and it works. So far only tested on a small number of images where small == 1-2. Warping all these images as well as running enough simulations with all the shape noise and other sources of noise is very expensive. We believe that the algorithms we have now will work in the low number of images regime, which is where LSST will be in the first few years.

MB: The PSFs are exact in the sense that there are no edges, this is important - we cannot recover shear without an exact PSF

CTS: You say you have a noise realization - but only one?

ES: We can make 10 if we want and put them through the pipeline

CTS: 10 on the fly? Is that because it is not computationally prohibitive? Or make 10 and store them?

MB: We will probably store ~2 not 10 if we go this route

JB: Eventually want to use the same warps for these and other coadds

CTS: Time/space tradeoffs - we don't need precision for noise, can we use compression. This is done in DES to some level.

JB: the six catalogs are narrow but have 5-6 times the number of rows.

LPG: Do we need to serve them in Qserv? Can we use parquet, what are the access patterns for these catalogs.

MBL: Do not need to do forced photometry back on the images.

LPG: Do you plan to use cell-based coadds for the difference image templates

EB: Don't have good input data on that yet - a bit risky at this stage.

- ✓ Jim Bosch follow up with Strong Lensing people on the suitability of this work for strong lensing (WL cluster people) 31 Mar 2023
- ✓ Jim Bosch Understand the usage patterns for the ShearObject catalogs 30 Apr 2023
- ✓ Leanne Guy Schedule a follow up to this discussion to define conceptual schema for metadetect catalogs to add to DPDD 31 Mar 2023

AOB	Leanne Guy	Next meeting is: 27 Feb 2023	
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List of SST tasks (Confluence)

Description	Due date	Assignee	Task appears on
<input type="checkbox"/> Robert Lupton Clarify the meaning of time in the object table. 1 sentence description in sdm_schemas, can link to a short DMTN. <i>Update 2022-02-09: Meeting to resolve this on 2022-02-21</i> 28 Feb 2022	28 Feb 2022	Robert Lupton	2018-11-05 DM SST F2F Agenda and Meeting notes
<input type="checkbox"/> Gregory Dubois-Felsmann check if SDM standardization is adequately represented in project documents, and whether DMTN-067 should be required. 31 Mar 2022	31 Mar 2022	Gregory Dubois-Felsmann	2022-02-14 DM-SST Virtual F2F Agenda and Meeting notes
<input type="checkbox"/> Steve Ritz Work with DM and Camera to develop plans for delivering a shutter position-vs-time model 16 May 2022	16 May 2022	Steve Ritz	2022-03-14 DM-SST Agenda and Meeting Notes
<input type="checkbox"/> Gregory Dubois-Felsmann / Leanne Guy Create a TN that outlines the science use cases and options for compressed PVIs from AP. Present the issue at DMLT VF2F and then the PST. 13 Jun 2022	13 Jun 2022	Gregory Dubois-Felsmann	2022-05-09 DM-SST Agenda and Meeting Notes
<input type="checkbox"/> Eli Rykoff Report on what information DES used for their decision on using compression? 25 Jul 2022	25 Jul 2022	Eli Rykoff	2022-06-06 DM-SST VF2F Agenda and Meeting notes
<input type="checkbox"/> Melissa Graham to draft a proposal for including pz in alert packets 12 Sep 2022	12 Sep 2022	Melissa Graham	2022-08-15 DM-SST Agenda and Meeting Notes
<input type="checkbox"/> Steve Ritz Leanne Guy Gregory Dubois-Felsmann Organize a meeting to review Camera telemetry/ how what the Camera reports 26 Sep 2022	26 Sep 2022	Steve Ritz	2022-09-12 DM-SST Agenda and Meeting Notes
<input type="checkbox"/> Gregory Dubois-Felsmann start a technote to write down the details for science end user interface to SED corrections in catalogs 31 Oct 2022	31 Oct 2022	Gregory Dubois-Felsmann	2022-08-22 DM-SST Agenda and Meeting Notes
<input type="checkbox"/> Leanne Guy Gregory Dubois-Felsmann Raise the AP image-availability gap (between 30 days and the DR) issue to the PST 31 Dec 2022	31 Dec 2022	Leanne Guy	2022-06-06 DM-SST VF2F Agenda and Meeting notes
<input type="checkbox"/> Leanne Guy read RFC-842 and work out how much of this is in DM scope. Work with Eli Rykoff and Robert Lupton to make a plan to address this 28 Feb 2023	28 Feb 2023	Leanne Guy	2023-01-23 DM-SST Agenda and Meeting Notes
<input type="checkbox"/> Leanne Guy talk to Steve R about presenting plans for the ShearObject table to PST and SciCollab chairs 20 Mar 2023	20 Mar 2023	Leanne Guy	2023-02-27 DM-SST Agenda and Meeting Notes

<input type="checkbox"/>	Jim Bosch Provide an example of a file containing a cell-based coadd for Gregory Dubois-Felsmann to examine to assess implications for firefly 31 Mar 2023	31 Mar 2023	Jim Bosch	2023-02-27 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Leanne Guy talk to Gregory Dubois-Felsmann to review the original intent of the AFS-related Portal requirements before deciding on a course of action 29 May 2023	29 May 2023	Leanne Guy	2023-05-01 DM-SST Focus Meeting - Brokers in Commissioning
<input type="checkbox"/>	Leanne Guy Prepare to consult the PST on the question of providing compressed PVIs for AP outputs, to cover the period before the data become available in a DR. 02 Jun 2023	02 Jun 2023	Leanne Guy	2023-03-27 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Jim Bosch Incorporate 30-60 day period for raws on disk into the strawman proposal and present to KT 26 Jun 2023	26 Jun 2023	Jim Bosch	2023-05-08 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Parker Fagrelus Patrick Ingraham how long will it take to do a scan as described? No need to scan the whole WL range but will require additional points outside nominal lambda range. 30 Jun 2023	30 Jun 2023	Parker Fagrelus	2023-03-27 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Colin Slater Gregory Dubois-Felsmann Robert Lupton Jeffrey Carlin Convene meeting/vf2f session on definition of dataset selection requirements in DMS-REQ-293 31 Jul 2023	31 Jul 2023	Colin Slater	2023-07-10 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Eli Rykoff , Leanne Guy Develop a proposal for what calibration processing, hardware, data we actually need and what will be needed for DR1. This has implications for the ORR and for prioritisation of work in commissioning 31 Jul 2023	31 Jul 2023	Eli Rykoff	2023-01-30 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Yusra AlSayyad will look to see if there is any effort to help on option 1 28 Aug 2023	28 Aug 2023	Yusra AlSayyad	2023-08-14 DM-SST Agenda and Meeting Notes
<input type="checkbox"/>	Jim Bosch Provide a physical example of that a up on cell table would look like fo the Colin Slater / DAX team to review 31 Aug 2023	31 Aug 2023	Jim Bosch	2023-02-27 DM-SST Agenda and Meeting Notes