

HECTOR SCIENCE MEETING
TUESDAY 9 AUGUST 2022, 3.00 – 4.00PM
Zoom – the meeting was recording for minute taking purposes only.

Attendees: Julia Bryant (Chair), Sree Oh, Stefania Barsanti, Jesse van de Sande, Scott Croom, Gabriella Quattropani, Brent Groves, Mina Pak, Joon Hyeop Lee, Hyunjin Jeong, Jong Chul Lee, Amelia Fraser-McKelvie, Sarah Sweet, Angel Sanchez Lopez, Henry Zovaro

Apologies: Celine Boehm, Marie Partridge, Sam Vaughan, Matthew Colless, Jiwon Chung

Item	
1	<p>Action Items from the previous meeting (14 June 2022)</p> <p>Observer Numbers</p> <ul style="list-style-type: none"> Some people have volunteered for observing, but more are required. This will remain as an ongoing action item, contact Sree. <p>Cubing Methods</p> <ul style="list-style-type: none"> Brent has been liaising with Sree about the cubing methods. The files will be uploaded on to the Hector Wiki. At the last observing run a set of dithered images of stars were taken so cubing can be tested on these. Brent has been testing the psfs for the various methods so would be good to have the statistics on the different observing conditions. <p>The 4 Initial Observing Proposal Objectives</p> <ul style="list-style-type: none"> Julia sent an email requesting proposal submissions with a deadline to the Science Working Group. <p>Data Reduction</p> <ul style="list-style-type: none"> Additional people are still required to sign up for data reduction tasks and are encouraged to review the list of tasks in Sree's email. Prior experience is not required. <p>Busy Week</p> <ul style="list-style-type: none"> Organisers for the joint SAMI/Hector Busy week are required, located in Sydney. Marie has provisionally booked meeting room 1 & 2 at AAO-MQ from 4 – 7 October. The meeting room has TV screens and built in microphones for AV conferencing. At present the capacity is limited to 20 people but it is hoped this will be lifted at the beginning of Oct. <p>Action items:</p> <ul style="list-style-type: none"> Brent will send an email regarding the cubing method files and put the information on the Wiki Sree will upload the logs to the cloud and advise the group once available. Everyone is asked to add the Busy Week to their calendars from 4 – 7 Oct and attend in person if possible. Contact Sree regarding DR tasks and observing. Contact Julia regarding assisting with Busy Week organisation.
2	<p>Hector Status and Observing update</p> <ul style="list-style-type: none"> During the last run of 7 nights, only 3 were clear, however there was a dome failure on one night, so there were only 2 nights of successful commissioning data. Many of the commissioning tasks have been completed, however there is one task that cannot be completed until September where observation of a star fields is required. Most aspects of the instrument are working well. At the end of the June run an actuator on the positioner seemed to fail and plates could not be configured. <ul style="list-style-type: none"> The actuator was removed but no fault could be found. Prior to the last run the robot feeder stage was realigned however there were still intermittent problems with the robot configuring the field plate these were investigated. At the end of the last run an electronics test was conducted on the robot arm but the actuator and controller polarities were accidentally reversed which led to both being destroyed. There are 3 spare actuators due to arrive. The controllers have a longer lead time, however there is a temporary controller which can be used. The positive outcome is that the rebuild seems to have solved the ongoing issues with the robot. A direct feedback mechanism has also been introduced so that if the actuator doesn't move to the correct position the robot arm will stop. This will improve efficiency as the robot doesn't have to be watched all the time. It also stops the robot crashing. This will be tested on the run next week. Julia will be travelling to SSO early to realign the robot arm in the day prior to the observing run. A slight correction to the metrology code will be tested and improved in September. The new plate rotator seems to be functioning well. <ul style="list-style-type: none"> During the next run the rotator drift will be measured. Primarily there is good positioning. Julia showed a plate view which showed that the blue crosses on top of the star images (calculated using Madusha's fitting code) are very close to the centre of each of the bundles, so the objects are aligned in their bundles. The precision can be improved during the metrology test. By the end of the next run there will be galaxy data available on which to run the python codes. It would be good to have an idea of what data will be available to work on during the busy week in order to organise the work effort efficiently. Sree confirmed that she will generate a cube to test at the busy week. This will enable feedback for further testing. Additional DR tasks can be addressed during busy week.

	<ul style="list-style-type: none"> • There are currently 11 pluggers and robot positioners trained. By the end of the Semester there will be 17 trained in total. Julia thanked everyone involved. Having a large team makes observing easier. • The observing proposal for the next Semester (Feb 2023) will be discussed at the Hector Exec tomorrow (10 Aug), including AAT partners submitting requests for shared time. The next proposal is due soon.
3	<p>Data Reduction (DR) Update – Sree</p> <ul style="list-style-type: none"> • The working group have developed a code to assist with observing eg identifying tramline failures and the cause of the issue. • Once the tramline is checked and there are no failures, the code Madusha developed can be used this calculates the P and Q offsets. • Sam has also developed the Hector offset code that can calculate the offsets this can calculate the offset to move the targets are from the centre of one bundle to another. • The DR process is updated in the observing procedure including the use of the DR machine at the AAT. • Hector pipeline work is organised in github. Jesse and Brent will be invited to add to this. • All the tramlines are well reduced. • During the next run Scott will try to fit tramlines where there are oddities using 2dfdr. As long as the fibre referencing is correct and they are in the correct places bright enough to detect things, there should not be any more failures. • With 2dfdr fibres get broken regularly but still produce a tramline where the fibre should have been, however there is a difference as to where the gaps and default positions are and fibres are located at both ends of the slitlet with Hector versus 2dfdr. The default algorithms that find blocks won't always work particularly if the incorrect fibres are flagged and there are shifts of the slit in AAOmega. Now that the fibre conflicts are resolved Scott will default back to a more generic algorithm. Each instrument has different algorithms and new code has been added to 2dfdr over 25 years, Scott has attempted to update and simplify this. <p>Action Items</p> <ul style="list-style-type: none"> • Please send any updates to the DR procedures to Sree or Madusha.
	<p>Data Central Error Messages</p> <ul style="list-style-type: none"> • Whilst Sree has raised the errors with Simon O'Toole and these have been addressed, it is important that individuals advise him (via email) if there are problems so that the full extent of the issues are clear and can be tracked. • Some of the issues seems to arise due to Data Central updates occurring at night which coincides with observing and the updates do not take effect until the following day. • During the last run, observers were not able to access tile files from the Hector cloud and some passwords were not functioning (although will then be fixed and work the following day). • It was noted that the only other survey using Data Central is DEVILS, however the survey has finished, and they are using the DC resources in a different way to Hector. • If issues persist a discussion may be required about the ongoing reliability of Data Central. <p>Action Items</p> <ul style="list-style-type: none"> • Julia and Sree to contact Simon O'Toole to discuss the ongoing issues. • All members to contact Simon directly regarding any issues that arise with accessing the Hector Wiki or cloud.
4	<p>Other Business</p> <p>Early Science Papers</p> <ul style="list-style-type: none"> • Papers are being posted on the Wiki. The Exec will discuss these tomorrow (10 Aug). • Julia flagged that the fields Sam has been preparing are some of the best galaxies he could find to provide useful data for the early science cases.
	<p>The next Hector Science meeting is scheduled for Wed 14 September 2022, 3 - 4pm AEST</p> <p>Meetings will continue alternately on the 2nd Tue and Wed of each month at 3 - 4pm AEST (1 – 2pm AWST).</p>