

HECTOR SCIENCE MEETING
TUESDAY 14 SEPTEMBER 2021, 12.00 - 1.00PM
Zoom – the meeting was recording for minute taking purposes only.

Attendees: Julia Bryant (Chair), Sree Oh, Marie Partridge, Matt Owers, Stefania Barsanti, Jesse van de Sande, Nic Scott, Scott Croom, Nabo Mukty, Mina Pak, Joon Hyeop Lee, Jiwon Chung, Hyunjin Jeong, Angel Lopez-Sanchez, Matthew Colless, Sam Vaughan, Amelia Fraser-McKelvie, Richard McDermid, Luca Cortese, Sarah Sweet, Brent Groves, Celine Boehm, Michael Brown

Item	
1	<p>Welcome and Overview</p> <ul style="list-style-type: none"> Julia welcomed everyone and provided an overview of the meeting agenda.
2	<p>Action Items from the previous meeting (11 Aug)</p> <p>Data Management/QC Coordinator Role</p> <ul style="list-style-type: none"> Julia hasn't received any suggestions for this role from the Science WG following a communication to the Hector Team. It was suggested that the new Hector postdoc could possibly take on the role. The A3D workplan is being updated (Scott has sent out requests for the relevant people to update sections). There have been a number of new positions recently appointed within A3D, therefore the postdoc positions should be reviewed to ensure that effort is equitably distributed. This role be assigned post review. <p>Action Item:</p> <ul style="list-style-type: none"> Group members to send any additional suggestions for people to fill the QC Coordinator to Julia.
3	<p>2022A Survey Proposal</p> <ul style="list-style-type: none"> Julia will forward the proposal to the group for review, it is similar to the previous proposal. The submission date is 16 Sept 2021. The AAOmega spectrograph will be taken out of service to refurbish the cryostats during 2022A however this will still allow for 12 of the 19 hexabundles to observe galaxies with the Spector spectrograph. In addition to Hector nights, 2dF nights are being requested to complete the input catalogues for cluster regions. The cluster regions are only available at the start and end of the semester. 5 clusters will be observed, as well Hector observations alongside the WAVES North region and the GAMA G12 and G15 regions not covered by SAMI. The WAVES South region is being observed this semester. The submission is for 50 Hector nights and 8 AAOmega 2dF nights . <p>Forthcoming proposed targets 2022A – Refer to Sam's slides</p> <p>Slide 2 – AAT Semester 2022A overview AAOmega is off the telescope for approx. 3 – 4 weeks so the constraints of 2dF being unavailable have been taken into consideration.</p> <p>Slide 3 – The Plan 2dF – 6 full nights in July to filling in the input catalogue. Also applying for applying for 4 half nights in February in case AAOmega refurbishment is delayed or postponed. This is all grey time, super dark conditions are not required to red shift.</p> <p>Slide 4 – The Plan 2dF –redshift survey $r_{\text{mag}} 18.5$. Sam thanked Matt for supplying the plots. The plots show the clusters, colour bar shows spectroscopic completeness, the darker the red the better.</p> <p>Slide 5 – The Plan 2dF – $r_{\text{mag}} 19.5$ Ideally get down to $r_{\text{mag}} 19.5$ better for environmental metrics, mass of approximately $10^{9.5}$. Filling out cluster regions to boost completeness.</p> <p>Slide 6 – The Plan Hector 50 nights = 8 or 9 nights per month . There is a plan from end Feb – end July. Observing 1300 galaxies during the semester taking into account AAOmega being off-line.</p> <p>Slide 7 - G09 G09 is outside the WAVES North region no ancillary data available for this area. It has been decided to leave G09 out at present In future galaxies from the low RA end of the WAVES North field will be observed.</p> <p>Slide 8 - G12 and G15 SAMI observed galaxies – Red boxes = G12 & G15, Green = SAMI observations The strips at the top and bottom of the G15 and G12 boxes respectively are where SAMI did not observe galaxies.</p> <p>Slide 9 – G12 and G15 The plan is to fill in these 2 strips and target galaxies not observed by the SAMI survey. SAMI Completeness for the primary catalogue is about 80% Total galaxies G12 = 845 and G15 = 1165. The strips represent 446 and 585 galaxies respectively. More analysis is required to decide whether to do more areas that just the strips.</p> <p>Discussion points:</p>

	<ul style="list-style-type: none"> • It was noted that last time AAOmega underwent refurbishment this led to excess scattered light in the blue, probably due to contamination of the dewar. Is testing going to be undertaken to ensure that the dewar and the optics are functioning correctly once the work on AAOmega has been completed? The optics are unlikely to be affected as the work being undertaken is just on the cryostats. • Dark time begins in February to the end March. AAOmega will be off-line 2nd week of Feb reinstalled the last week of March, so will be off for one period of dark time. • It was confirmed that the galaxies were in the primary catalogue for SAMI, but were missed (outside of the strips), probably due to a lower tiling efficiency. For Hector a 2-degree field could fill in some of the galaxies not done in the 1 degree field with SAMI, the stellar mass vs red shift step function is slightly different to SAMI and now fall into the catalogue for Hector. • The tiling efficiency is very important at the start of the survey, some of those galaxies could be filled in later in the survey. • For the current proposal the focus is targeting galaxies from which there are immediate science gains eg low mass dwarfs where there are good kinematics (which were not possible to observe with SAMI) and milky way analogues (Jesse and Nic) which were identified in SAMI but for which good kinematics were not possible. • It was confirmed that the additional hexabundles which are not in use due to AAOmega being off telescope would be tied off, this needs to be done for practical reasons. • Having almost fully complete observations for G12 and G15 would be helpful for some science. Additional galaxies could be filled in at the end of the survey, but the survey will start with areas where a high tiling efficiency can be achieved.
4	<p>Program of Science Presentations</p> <ul style="list-style-type: none"> • The target selection and Science group meetings for Hector were combined into one meeting which has focussed on target selections ahead of the Survey. We now need to consider if science presentations will be valuable, or too much of an overlap with SAMI and other sources. Several commented that there are enough science presentations on offer already from other meetings and we should not adopt regular talks in Hector Science meetings. • There should be a consensus as to who is leading which early science papers and what support each subproject needs, especially with regard to data from outside of Hector. Perhaps a short talk on this at each meeting would be useful to help facilitate the early paper submissions. • The process of which people will be writing specific science papers will be discussed at the next Executive meeting with a view to getting team members to sign up to projects and papers in November. • Other future collaborations and synergies with other projects and teams should be considered and formal MoUs drafted once data is available. • It was agreed that a list of which galaxies are due to be observed in the first year would be useful to shape science projects. The observation proposal covers this however not to the extent of stellar mass and red shifts. Sam will make the tile list and files available on the Wiki prior to each observing run. • It would be useful to flag galaxies that will be observed for each Semester. It was commented that SAMI had a flag for galaxies observed vs not observed. Discussions have been taking place with Data Central about running the scripts to update the observation data automatically. <p>Action Item:</p> <ul style="list-style-type: none"> • Sam to post the tile list and files available for each observing run on the Wiki. • The first observing proposal to be added to the Hector website.
5	<p>Installation and Observation Update</p> <ul style="list-style-type: none"> • The installation is booked for November (COVID permitting) and observations are planned at the beginning of December. • NSW Health regulations now require those attending the telescope site to be fully vaccinated, there hasn't been any communication about people traveling to regional NSW from interstate. Everyone is encouraged to get vaccinated ASAP so that observing training can occur. There will be team members available from NSW to provide back up in case observers from interstate are unable to travel due to changing border restrictions. • Julia thanked Sree for her proactivity in organising observers amid changing COVID restrictions.
	<p>Any other business</p> <ul style="list-style-type: none"> • The next 2 meetings may be cancelled if not required.
	<p>The next Hector Science meeting is scheduled for Wed 13 October 2021, 3 - 4pm</p> <p>Meetings will continue alternately on the 2nd Tue and Wed of each month at 3-4pm AEST (1 – 2pm AWST).</p>