MEETING

Meeting Date 19 February 2024

Ref MoMAAUG#11

ESA-ESDC-GEN-MOM-0053

Meeting Place WebEx

Chairperson Natalie Webb

Minute's Date 19 September 2024

Participants

AAUG Members: Natalie Webb (AAUG Chair), Hervé Bouy, Annalisa De Cia, Ioannis Georgantopoulos, Søren Larsen, Christopher Conselice, Sandra Savaglio

In attendance: Guido de Marchi (ESDC Science Lead), Bruno Merín (Head of ESDC), Norbert. Schartel (XMM-Newton Project Scientist and Project Scientist's representative), Deborah Baines (ESASky Support Scientist), Rachana Bhatawdekar (ESDC Technical Lead), Bruno Altieri (Euclid Archive Scientist), Hector Canovas (Gaia Archive Support Scientist), Jos de Bruijne (ESDC Survey Science Lead & Gaia deputy Project Scientist), Javier Espinosa (ESDC), Monica Fernandez (ESDC Observatory Archives Technical Lead), Elena Jimenez Bailon (XMM-Newton Support Archive Scientist), Alvaro Labiano (JWST Support Archive Scientist), Ignacio Leon (ESDC), Sara Nieto (ESDC Survey Archives Technical Lead), Hector Perez (ESDC SCO-08 Work Area Manager), Elena Puga (WinterWay), Maria Santos-Lleo (XMM-Newton Science Support Manager), Eva Verdugo (PLATO Archive Scientist).

Absent:

Subject Minutes of the Astronomy Archives User Group (AAUG) meeting #11.

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Description	Action	Status
AAUG members to investigate one EU project each, investigate the type of data products from ESA missions that the project will be creating, advise ESDC what to ask the project PI, and if there is enough information at this point, recommend if the data should be added to any of the ESA science archives.	2019-02-13/13	CLOSED
ESDC to begin contacting the PIs of the identified EU projects to gauge their interest in ESA preserving their project data.	2020-10-02/06	CLOSED

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Description	Action	Status
ESDC to also contact the PIs for the five recently identified EU H2020 and FP7 projects (action linked to Action 2020-10-02/06).	2021-04-14/03	CLOSED
ESDC to find an 8th member of the AAUG and ask for suggestions from stakeholders.	2023-04-25/01	OPEN
The ESDC to identify which projects have been accepted in the latest EU calls that will be producing products using ESA data.	2024-02-19/01	
G. de Marchi to perform an analysis on the submitted and accepted ARVP proposals to identify any potential imbalances related to country, gender, or other factors.	2024-02-19/02	
G. de Marchi to seek feedback from the ARVP visitors on their experiences, particularly whether the visit has led to any publications or proposals.	2024-02-19/03	
D. Baines to split the user survey results between early-career scientists and late-career scientists to help identify new trends.	2024-02-19/04	
D. Baines to contact the AAUG in May to start the process of finding a date for the next meeting, to be held online in the autumn.	2024-02-19/05	

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WELCOME:

N. Webb and G. de Marchi opened the meeting by welcoming everyone and summarising the main topics to be discussed during the meeting. The meeting was hybrid, both online and held at ESAC, Madrid on Monday 19th February 2024.

ADOPTION OF THE AGENDA:

The agenda of the meeting was presented and adopted by the AAUG members.

REVIEW OF ACTIONS:

The actions from the previous meeting were reviewed. One action remains open: **Action 2023-04-25/01**: *ESDC to find an 8th member of the AAUG and ask for suggestions from stakeholders.* Three actions were closed during the meeting, all related to the EU H2020 and FP7 projects: **Action 2019-02-13/13**: *AAUG members to investigate one EU project each, investigate the type of data products from ESA missions that the project will be creating, advise ESDC what to ask the project PI, and if there is enough information at this point, recommend if the data should be added to any of the ESA science archives.* **Action 2020-10-02/06**: *ESDC to begin contacting the PIs of the identified EU projects to gauge their interest in ESA preserving their project data.* **Action 2021-04-14/03**: *ESDC to also contact the PIs for the five recently identified EU H2020 and FP7 projects (action linked to Action 2020-10-02/06).* These actions were closed during the meeting since they were all covered in the session about the EU H2020 and FP7 project data and repatriation of ESA data (see section 2).

PRESENTATIONS:

The following presentations and discussion sessions were held on 19th February 2024:

1. ESA Astronomy Archives session at EAS 2023 and plans for EAS 2024 (G. de Marchi)
2. EU H2020 and FP7 project data and repatriation of ESA data (E. Puga)
3. ESASky Updates (D. Baines)
4. Archival Research Visitor Programme status (G. de Marchi)
5. 2023 Astronomy Archives User Survey Results (D. Baines)
6. Date and time of next meeting
7. AOB
8. Closed session

The slides of the presentations are available on the ESAC Science Data Centre (ESDC) public web site, under the heading Archives User Groups, Astronomy: https://www.cosmos.esa.int/web/esdc/aaug/meeting11

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DISCUSSIONS:

Discussions took place during and after each presentation. This section presents a summary of the discussions and is ordered by the scheduled agenda given above.

1. ESA Astronomy Archives session at EAS 2023 and plans for EAS 2024

G. de Marchi gave a summary about the ESA Archives lunch session that was held at the 2023 European Astronomical Society (EAS) annual meeting on Wednesday 12th July 2023 in Krakow. As in previous years, the aim of the session was to create awareness about the ESA Space Science Archives, create awareness about the AAUG and to engage the community in providing ideas and inputs. More than 50 EAS participants were in attendance. The session included presentations about the AAUG, the impact of archival papers, the Archive Research Visitor Programme, the latest features and data in ESASky and a hands-on ESASky demo. The EAS 2023 ESA Astronomy Archives lunch session page can be found here: https://eas.unige.ch/EAS2023/session.jsp?id=LS5. In addition to the session, ESA again had a booth and members of the ESDC gave archive and ESASky demos throughout the week to participants (both scheduled and on-the-fly demos).

The last 30 minutes of the lunch session were reserved for an open-floor discussion session with questions posed on slido for the participants to answer on-the-fly. Some of the questions asked were the same as those in the 2023 ESA Astronomy Archives User Survey. G. de Marchi noted a significant difference in demographics between the survey participants and the audience during the lunch session, the EAS session was a much younger audience compared to the survey participants. Despite this difference, both groups' responses were quite similar, especially regarding long-term expectations for the archives and the community's desired future developments. S. Savaglio proposed that future sessions alter the sequence of options in questions to differ from the survey order. A. Cia suggested keeping the open-ended questions and allowing participants to ask any questions they wish.

Another question posed to the audience was whether the archives and data need to be moved to the cloud, i.e. are the community going to stop performing data analysis on their computers? The answer was not yet, i.e. it is not yet a high priority. C. Conselice noted that this is a high priority for Euclid. N. Schartel raised the possibility of having copies of mission data in various member states, which would then offer computing facilities to their own communities, similar to how NASA provides data through the Amazon cloud. However, AAUG members pointed out that possibly not all ESA member states have super computing facilities, and less privileged communities might face reduced access. This led to ***Recommendation 2024-02-19/05*** that the chosen model to use for data storage and access must ensure equal access for all colleagues in all ESA member states.

Additional points were discussed on the topic. I. Georgantopoulos commented that if you have a cloud solution it also solves other problems such as downloading software. H. Bouy pointed out that CERN provide very large amounts of data online and could be a good source of advice. The discussion also touched on the

Gaia and Euclid missions. J. de Bruijne noted that while the static Gaia data archived is relatively small and manageable within the archive, the reprocessing of raw Gaia data has been outsourced to supercomputing facilities in member states. In contrast, the sheer volume of data that Euclid will archive is huge. N. Webb provided insight into XMM-Newton data: IRAP hosts the XMM-Newton Survey Science Centre (SSC), where they store all the XMM-Newton data in a reduced format on their disks. Researchers from the community often visit for a few months to work with the entire dataset at once, utilising the full archive. If such access were more widely available, then more people might use it and it could be a way of maximising the mission data.

G. de Marchi then presented the plans for the ESA Space Science Archives lunch session, to be held at the 2024 EAS annual meeting in Padova on Wednesday 3rd July. The structure this year will be similar to last year and will be 1.5 hours long. G. de Marchi asked who from the AAUG plans to attend the EAS and are available for the lunch session. It was decided to set up a panel on the podium for the question and answers session which will also include any of the AAUG members who can attend. N. Webb asked for the lunch session web page text to be updated to include the names of some of the ESA missions. The lunch session will be advertised to the community in the new ESA Science Newsletter, and it was also encouraged that the AAUG members advertise the session via their community email lists.

2. EU H2020 and FP7 project data and repatriation of ESA data

E. Puga gave a presentation on the status of the repatriation of data from ESA astronomy legacy missions and EU H2020 and FP7 projects. This project has been conducted through an EXPRO contract for the ESDC. For the EU-funded astronomy projects, oftentimes, high-level science data products or collections earn a higher level of visibility and use in the community than the original products from the mission archives. Therefore, the ESDC data repatriation project seeks out, through the AAUG recommendations, to include and serve those products and offer a central point of access.

The repatriation of the ESA legacy and EU-funded data went through the following process: firstly the data repositories for the datasets were identified and the high-level science data products were chosen and repatriated to the ESDC in coordination with the relevant project or mission experts. Digital Object Identifiers (DOIs) were given to the datasets. Then they were hosted in an accessible data archive for external users, in the ESASky legacy TAP (Table Access Protocol), available through ESASky and other VO Tools such as TOPCAT and Aladin, and data is available for download via URL and DataLink .

Four ESA Legacy missions data have been repatriated so far. Firstly, Hipparcos with 42 catalogues (split into 53 tables) were repatriated (see the ESDC newsletter article here for details). Then Cos-B data and CoRoT data were repatriated, both consisting of two catalogues and all associated data products which are made available via DataLink (see the ESDC newsletter article here for the Cos-B details and here for the CoRoT details). Finally, EXOSAT data has been repatriated from HEASARC consisting of 15 catalogues and 11 with DataLink. For the EU-funded projects, three have their data already published in the ESASky Legacy TAP: Herschel Extragalactic Legacy Project (HELP; 25 catalogues, one HiPS colour map and data products accessible via URL and DataLink), Exoplanet-A (2 catalogues) and StarFormMapper (10 catalogues). See the

ESDC Newsletter articles for details here and here.

E. Puga concluded the presentation with a demonstration on how to access all this data in ESASky using the External Data Centres feature. This was followed with a discussion. N. Webb asked about the challenges involved in retrieving the data and preparing it in a format suitable for ingestion. E. Puga responded that the process has varied significantly depending on each EU-funded project's disposition. Initial contact with the projects saw some respond promptly and enthusiastically, keen to provide their data to ESASky. Other projects required more effort, especially when they had concluded or teams were busy with other work. While some projects were willing to let the ESDC team retrieve the data already publicly available, and one project declined, citing that its data was available on other platforms and saw no need to include it in ESASky. Finally, there are six projects that have not responded at all.

Regarding the ease of preparing and ingesting the data, E. Puga explained that the process has gradually become more steamlined. The first project, Hipparcos, was more complex due to its size, but now the team can typically ingest data within one to two months. D. Baines asked if there were any outstanding project data (besides those that hadn't responded), and E. Puga mentioned that contact had been made with other project members who were reaching out to the PIs of the Vialactea and EtaEarth projects. E. Puga asked if any AAUG members who have contacts with PIs or collaborators could help contact them and convince them of the value of having their data at ESA and in ESASky. The AAUG members agreed and the project names were emailed to the AAUG. H. Bouy added that projects should be reminded of their obligation to make their data publicly available, although E. Puga noted that some have already published data in other platforms, such as the NASA planetary platforms. The EU projects are not required to publish data in a specific way. N. Webb commented that this is a great resource that the ESDC are providing, the data is being made very accessible, in an easy to use way, and can be used with other datasets. N. Webb also expressed confidence in convincing projects that this would maximize the value of their data and thanked E. Puga and the team for their work.

E. Puga commented that other more recent EU-funded projects have been mentioned in this forum before and asked where we stand with respect to including any of these projects data, examples given were XMM2ATHENA, GAIAUNLIMITED, NEMESIS, EXPLORE and SPACIOUS. It was commented that the GAIAUNLIMITED projects won't be producing data and the EXPLORE and SPACIOUS projects were for exploitation platforms, similar to datalabs. N. Webb confirmed XMM2ATHENA will produce products and software and said these latest relevant projects should probably be contacted. This led to an AAUG recommendation for ESA to continue their efforts in retrieving data from relevant current and upcoming projects (see ***Recommendation 2024-02-19/01***) and an action was taken to identify which projects have been accepted in the latest EU calls (***Action 2024-02-19/01***).

3. ESASky Updates

D. Baines presented the latest releases of ESASky since September 2022. These include updates to the latest catalogue releases (e.g. XMM-Newton serendipitous source catalogues, LAMOST) and more HiPS being included in the radio in October 2022. In December 2022, eROSITA Early Data Release (EDR) data were included in collaboration with the eROSITA-DE team, including access to the EDR observational data,

metadata and footprints, and a selection of the EDR catalogues and HiPS. N. Webb asked if eROSITA DR1 data will be added to ESASky. D. Baines confirmed DR1 data will be included and a meeting is being arranged to discuss this with the eROSITA team. N. Schartel commented that it would be good to include this data before the next XMM-Newton AO in July.

In March 2023, access to all IVOA Table Access Protocol (TAP) services was implemented, including access to the VizieR Catalogue Service from CDS (a long-standing request from users) in the updated External Data Centres feature. For the first time in ESASky, ADQL (Astronomical Data Query Language) can be used to query TAP tables. S. Savaglio asked if the Swift Point Source Catalogue had been included yet (a previous request from the AAUG). D. Baines said it will be added to the catalogues button in the coming months, and she also demoed how the catalogue can be accessed and displayed in ESASky via the VizieR and HEASARC TAPs in the new External Data Centres feature. In June 2023, the multi-messenger feature was updated with automatic 'up-to-the-minute' gravitional wave alerts from the LIGO-Virgo-KAGRA Observing Run 4. Two new catalogues were also added, the GLADE+ Galaxy Catalog (used by the community to search for the electromagnetic counterparts of gravitational waves) and the All-sky PLATO Input Catalogue. Additionally in June, a touchscreen version of ESASky for outreach purposes was released and has been installed in the ESA Headquarters visitor centre (Astrolabe). In October 2023, the Gaia Focused Product Release crowded field source catalogue, and WMAP and Quijote radio HiPS were included, along with two JWST PR images of the Orion Nebula. And finally in November 2023, the first five Euclid Early Release Observation PR images were made available in a new Euclid outreach images feature and a generic XMM-Newton EPIC-pn footprint was added to the observations planning tool. The AAUG were positive about the new ESASky developments and recommend the continual addition of new datasets (see ***Recommendation 2024-02-19/06***).

4. Archival Research Visitor Programme status

G. de Marchi presented a summary on the Archival Research Visitor Programme. The latest call is still open (deadline on 30th April 2024), therefore statistics for the call in Autumn 2023 were shown. This was the programme's sixth call. 30 applications were received, with astronomy the majority (20). Most applications were to use data from the large observatories or surveys, and it was commented that the missions included in the proposals do not always automatically imply the area of research, for example Gaia to study asteroids and INTEGRAL and Rosetta for magnetic fields. It was also noted that machine learning is becoming popular, with 20% of proposals including some machine learning. The country or nationality distribution continues to be very wide, with most applications from the UK and Italy and most applicants are nationals of Italy, Spain or India. 7 visitors were accepted in this round and are listed in the programme's web page: https://www.cosmos.esa.int/web/esdc/visitor-programme.

G. de Marchi then presented the gender-based statistics for all six previous calls. AAUG members were pleased to see an improvement in gender balance following the implementation of the double-anonymous review process. This approach appears to have encouraged more women to apply, although it's acknowledged that the sample size is relatively small. A. Cia suggested that one way to encourage more women to apply is by ensuring a balanced representation of women in the ARVP cosmos page's table of expertise, which lists ESA contacts and their specialities. She inquired whether this balance had improved. G. de Marchi responded that

gender balance is improving within ESA's science directorate, particularly among the new generation of scientists, and they are encouraging fellows to add their names to the table. G. de Marchi also highlighted that the results of the selected scientists per call are published in the ARVP page, where the gender distribution is nicely balanced, and this might also help convey a positive message.

The AAUG suggested checking the statistics for each country that applied and each country that was accepted, to ensure there are no underlying issues. Additionally, they recommended performing an analysis on the submitted and accepted proposals to identify any potential imbalances related to country, gender, or other factors (***Action 2024-02-19/02***).

The AAUG inquired whether their ranking of proposals aligned with those of other evaluators. G. de Marchi confirmed that there was general agreement in the rankings, with only one exception regarding a Heliophysics proposal. Overall, the Faculty and AAUG rankings were more or less consistent.

There then followed a discussion about including a brief presentation on the ARVP during the EAS ESA Space Science Archives lunch session, scheduled for 3rd July 2024. It was noted that the successful ARVP visitors for this round will be announced two days earlier, on 1st July 2024. Finally, the AAUG requested that ESDC seek feedback from the visitors on their experiences, particularly whether the visit has led to any publications or proposals (***Action 2024-02-19/03***). See ***Recommendation 2024-02-19/04*** for further recommendations about the Archival Research Visitor Programme, compiled during the closed session.

5. Astronomy Archives User Survey

D. Baines presented the results of the 2023 ESA Astronomy Archives User Survey, which was initiated by the AAUG in September 2022, opened at the end of June 2023, and closed in early January 2024. The survey was annouced through various European national professional astronomer's email lists, as well as within ESA and ESO. It was also announced during the EAS ESA Science Archives lunch session in July 2023, featured in a number of newsletters (including Gaia, XMM-Newton and the ESDC), and shared on social media platforms (such as to the astronomers Facebook group). Additionally, it was added to the top header of ESASky and on the homepages of the EJWST and EHST archives.

In October 2023, the reponses were reviewed, and the survey was re-announced to the UK community due to the initially low participation. However, after this second announcement, the response rate became comparable to other large European countries. The survey was also re-announced to ESA Research Fellows, YGTs and trainees in an effort to gather more responses from early career astronomers, though this was somewhat less successful. A total of 142 responses were received, 111 of which came from professional astronomers (PhDs and above). D. Baines noted that this response rate was lower compared to the previous survey in 2019, which had over 200 responses. The majority of the responses received were from senior astronomers. Regarding both of these points, G. de Marchi asked if the number of questions in the survey could be reduced down to something that could be answered in three minutes. He also suggested asking people to fill out the survey when they come to visit the ESA booth at the EAS conference, targeting the early career astronomers (of which there are many at the EAS). A discussion followed around these ideas and the

AAUG were in agreement that future surveys should be shorter and suggested that the archives, ESASky and Datalabs could be addressed separately in different surveys (see ***Recommendation 2024-02-19/02***). Additionally, the idea of the chance to win prizes for filling out the survey was suggested as a possibility.

D. Baines then went through the answers to all the survey questions, both from all participants and from professional astronomers only. N. Schartel noted how low the numbers were for survey participants from the US and China. It was commented that astronomers in these countries should have received news about the survey via the mission newsletters, or may have seen it in the ESASky and archive banners or in social media.

When looking at the archive usage via web or machine interfaces, the majority of the users still use the web interface more than the machine interface (or still use both). G. de Marchi emphasised the importance of recognising that many users, particularly senior scientists, still rely on archive web interfaces. Contrary to the belief that everything is done via Python or ADQL, a large portion of users prefer the web interfaces. If support for these is removed in favour of machine interfaces, a significant user base could be lost. G. de Marchi recalled a previous AAUG discussion, where N. Schartel noted that some unique features of the XMM-Newton archive, if removed, would be missed by users. While it's challenging to maintain multiple archive interfaces, G. de Marchi argued that as long as these unique features support science, they should remain. Moving to a “standard” approach that lacks these features could negatively impact scientific work. N. Schartel further added that web interfaces are ideal for quick data exploration, allowing users to assess data's relevance to their research.

AAUG members suggested to split the answers from early-career scientists and late-career scientists to help identify possible new trends (see ***Recommendation 2024-02-19/02***). D. Baines took the action to do this for some of the questions, particularly the web and machine interface usage and the future developments for the archives (***Action 2024-02-19/04***). The AAUG also suggested that looking at the fractions rather than percentages might be more interesting for the questions where more than one answer could be selected (e.g. the activities and purposes for which the archives are used, questions 11 and 12).

For the planned and possible archive developments, the activities prioritised by professional astronomers, in order of importance, were: 1) Providing advanced web-based visualisers and cut-out services (for images, time-series, spectra and FITS cubes), 2) Access to scientific data exploration platforms for data (sharing and publishing) and for software close to the data (processing, Jupyter notebooks / Hub / Lab, sharing code), 3) A common access point to all ESA Science missions in legacy phase, including astronomy, planetary, heliophysics and HRE missions (e.g. Herschel, Hipparcos, EXOSAT, ISO, Ulysses, etc.) and 4) Converting your archive searches into python code or straight into a Jupyter notebook. The AAUG recommend that ESA focus on these four developments (see ***Recommendation 2024-02-19/02***).

Finally, a discussion followed regarding the reporting of the survey results, leading to the inclusion of the following in ***Recommendation 2024-02-19/02***: ‘The responses to the survey provide a rich body of data that will help to focus the future development of the ESA archives, but could also help other institutions that are considering different directions for their own archives. For this reason, as well as to publicise more widely the ESA archives, the AAUG recommends that ESA write a paper that can be published on arXiv with the findings of the survey.’

6. Date and time of next meeting

The next meeting will be held online in the autumn. D. Baines took the action to contact the AAUG at the end of May to start the process of finding a date for the next meeting (***Action 2024-02-19/05***).

7. AOB

No AOBs were raised.

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RECOMMENDATIONS

The following recommendations were formulated by the AAUG:

Archiving and distributing EU H2020 and FP7 project data

Recommendation 2024-02-19/01: The AAUG congratulates ESA on the considerable work done in contacting PIs from completed EU H2020 and FP7 projects which are concerned with data from ESA missions, to identify if they have data products that are of value to the community. These data have then been retrieved and archived at ESA, and who are now providing an interface for the community to retrieve them. This is a very valuable job, as significant effort has been invested in developing the products, but it is difficult for a project to continue to make them available after the end of the project lifetime, thus this approach is improving the longevity of the data products and making them more visible. Whilst many of the projects have responded favourably, it appears that some projects have not responded. The AAUG offers their services to contact these PIs and try to encourage them to provide their products for the benefit of the wider community. The AAUG recommends ESA to continue their efforts in retrieving data from current and upcoming projects. Contacting PIs early in the project will make it easier to procure products, as there should be the manpower to provide the necessary commodities. Ideally there should be a strong link between ESA and the project from the outset, so that the products can be tailored to ESA requirements.

Astronomy Archives Survey

Recommendation 2024-02-19/02: The AAUG applauds ESA on the implementation of the latest Astronomy archives survey, as well as the collation of the results, which is not only excellent for finding out the needs of the community, but also for raising the profile of the archives and ESASky. The results provide a detailed insight into the requirements of the users and therefore will call for an in depth study of the details. The AAUG are available to assist with the interpretation. When possible, it would be beneficial to split the results between early-career scientists and late-career scientists to help identify new trends. With regards to the responses to question 24 which asked the users for their priorities for the future of the archives, the AAUG recommend that ESA focus on the four projects that have the largest number of people citing them as a priority, namely (and in order of priority) : 1) Providing advanced web-based visualisers and cut-out services (for images, time-series, spectra and FITS cubes), 2) Access to scientific data exploration platforms for data (sharing and publishing) and for software close to the data (processing, Jupyter notebooks / Hub / Lab, sharing code), 3) A common access point to all ESA Science missions in legacy phase, including astronomy, planetary, heliophysics and HRE missions (e.g. Herschel, Hipparcos, EXOSAT, ISO, Ulysses, etc.) and 4) Converting your archive searches into python code or straight into a Jupyter notebook. The AAUG also recommends that individual archives receive the mission specific comments left for them in the survey, especially if the issue was mentioned by more than one respondent. In general, the archives should try to remain as universal as possible, avoiding becoming too mission specific. The responses to the survey provide a rich body of data that will help to focus the future development of the ESA archives, but could also help other institutions that are considering different directions for their own archives. For this reason, as well as to

publicise more widely the ESA archives, the AAUG recommends that ESA write a paper that can be published on arXiv with the findings of the survey.

Recommendation 2024-02-19/03: With regards to future surveys, to encourage more users to provide feedback, the AAUG recommends that future surveys are shorter. One way to do this maybe to address separately ESASky, datalabs and the archives in two or more different surveys. It may also be worth investigating the possibility of collecting short (e.g. 3 min) feedback from the community during the Archives lunch session at the EAS meeting, or by posing a question to ESASky users (for example a question as they finish their session).

The Archival Research Visitor Programme

Recommendation 2024-02-19/04: The work done to ensure that women and minorities respond to the calls for the *Archival Research Visitor Programme* appears to be working as the balance has been much better in the last call. The AAUG recommend that ESA continue to monitor the statistics, so that the AAUG can advise if further action is required. The AAUG also recommends including on the application form, a statement reminding the applicant that the form should be filled in in an anonymous manner. They could then be asked to check a box saying that they have respected the anonymity or a phrase could be included to remind the applicant that violations of anonymity will lead to the proposal being disqualified. Further, to help ensure a fair chance to all applicants, it may be useful to provide a standard template for applications and limit to the text allowed for each section of the application. This could be done through an online form with a length limit for each section or a latex form which also limits the quantity of text for each question (in a similar way to proposal forms for telescopes, for example). Again, a reminder should be provided that if the applicant exceeds the maximum length, the proposal will be disqualified.
Finally, to enhance the attractiveness of the programme, the AAUG recommends providing some statistics on the countries of the applicants and/or the laureates. It would be nice to include some videos of the laureates describing their projects or their experiences during their visit. This could be based on the short report written by the visitor.

Archival Data

Recommendation 2024-02-19/05: During the discussion on providing ESA archival data and space to work on the data, there was a suggestion that some of the major European countries could provide cloud space for accessing and using archival data for their own communities, in a similar way to NASA that provide data through the Amazon cloud. The AAUG consider this to be a dangerous approach in Europe, where scientists in privileged communities will have easier access to data and resources and those in less privileged communities will suffer poorer access. Therefore, the AAUG recommends that the chosen model to use for data storage/access must ensure equal access for all colleagues in all ESA member states.
The AAUG is also looking forward to hearing more on the future multi-mission archive infrastructure, and recommends finding a way to continue to support the diversity of missions, while still trying to homogenise

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the archives in a single platform.

ESASky

Recommendation 2024-02-19/06: The AAUG congratulates ESA for including real-time information on multi-messenger events (e.g. Ligo, KAGRA, GCNs) in ESASky. The AAUG recommends the continual addition of new datasets into ESASky, including the Swift data.

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