Meeting Minutes of the

Astronomy and Astrophysics Advisory Committee

25- 26 January 2022

Members Attending:

Priyamvada Natarajan (Chair)
Kyle Dawson (Vice-Chair)
Wenda Cao
Alexie Leauthaud
Nancy Chanover
Nikole Lewis
Eliza Kempton
Stephan Meyer
Michael McCarthy
Willie Rockward
Deirdre Shoemaker
Abigail Vieregg
Ann Zabludoff

Agency personnel:

Martin Still, NSF-AST
Allison Farrow, NSF-AST
James Neff, NSF-AST
Donna O'Malley, NSF-AST
Renee Adonteng, NSF-AST
Ashley VanderLey, NSF-AST
Elizabeth Pentecost, NSF-AST
Nigel Sharp, NSF-AST
Zoran Ninkov, NSF-AST
Dave Boboltz, NSF-AST
Ed Ajhar, NSF-AST
Glen Langston, NSF-AST
Hans Krimm, NSF-AST
Craig McClure, NSF-AST
Tanner Abraham, NSF-AST
Debra Fischer, NSF-AST
Alison Peck, NSF-AST
Jonathan Williams, NSF-AST
Andrea Prestwich, NSF-AST
David Morris, NSF-AST
Carrie Black, NSF-AST
John Chapin, NSF-AST
Luke Sollitt, NSF-AST
Chris Davis, NSF-AST
Joseph Pesce, NSF-AST
Andreas Berlind, NSF-AST
Sarah Higdon, NSF-AST
James Higdon, NSF-AST
Chris Smith, NSF-MPS
Tie Luo, NSF-MPS
Sean Jones, NSF-MPS
Leighann Martin, NSF-MPS
Paul Hertz, NASA
Terri Brandt, NASA
Sangeeta Malhotra, NASA
Eric Smith, NASA
Dominic Benford, NASA
Alise Fisher, NASA
Doris Daou, NASA
Hannah Jang-Condell, NASA
William Latter, NASA
Hashima Hasan, NASA
Lindley Johnson, NASA
Azita Valinia, NASA
Erica Rodgers, NASA
John Callas, NASA-JPL
Kathy Turner, DOE-HEP
Helmut Marsiske, DOE-HEP
David Cinabro, DOE-HEP
Kelsie Krafton, DOE
Fritz Auguste, DOE
Patricia Crumley, DOE
Altaf Carim, DOE
Kartik Sheth, OSTP
Yi Pei, OMB
Denise Caldwell, NSF-PHY
Jean Cottam Allen, NSF-PHY
Bogdan Mihaila, NSF-PHY
Claire Hemingway, NSF-OISE
Michelle McCrackin, NSF-NSB
Kevin Cooke, NSF-OIA
Papitashvili Vladimir, NSF-OPP

Others:

Beth Willman, NOIRLab
Mark Dickinson, NOIRLab
Patrick McCarthy, NOIRLab
Marcia Smith, SpacePolicyOnline.com
Matt Malkan, UCLA
Griffin Reinecke, Lewis-Burke Associates LLC
Hale Stolberg, Lewis-Burke Associates LLC
James Murday, U South Carolina
Jan Brügmann, German Aerospace Center
Kate Von Holle, U Chicago
Etienne Dauvergne, ESA
Ashlee Wilkins, HSST Committee
Lee Curtis, AURA
Phil Puxley, AURA
Leslie Albright, Federal Science Partners
Joel Widder, Federal Science Partners
Colleen Hartman, NAS
Rachel O'Connor, Ball Aerospace
Rebecca Bernstein, GMTO
Aycin Aykutalp, U Texas at Austin
David Millman, Bell Atlantic
Drew Newman, Carnegie Science
Gwen Rudie, Carnegie Science
Fiona Harrison, CalTech
Robert Kennicutt, U Arizona
Stephen Clark, Space.com
Irene Klotz, Space.com
Joshua Pepper, Lehigh University
Sharon Franks, UC San Diego
Sylvie Espinasse, ESA
Tim Hayes, ProductionsNewYork.com

DAY 1; JANUARY 25, 2022

11:00 EST Welcome and General Remarks

Martin Still provided an overview of FACA requirements for the AAAC members. The presentation[1] covered the definition of a Federal Advisory Council Act (FACA) committee, the charge of the Astronomy and Astrophysics Advisory Committee (AAAC), and the purpose of the meeting.

The committee chair, Priya Natarajan asked for the approval of minutes from the previous meeting. No objections were heard; the vote to approve minutes was passed. The next meeting date is scheduled for February 22, 2022; future meeting dates will be proposed, discussed, and finalized by utilizing Doodle Poll. (Note: the February 22 meeting date has since been rescheduled to March 4, 2022.)

11:15 DOE/HEP Programs and Budget Update – Kathy Turner

Summary: A presentation[2] on the Office of High Energy Physics (HEP) Cosmic Frontier program was given by Kathy Turner from the Department of Energy. A Program Introduction, Guidance, and Budget were outlined. Cosmic Frontier is primarily a Particle Accelerator-based program with the purpose to understand the universe at the basic element level. The last few slides also covered some of the recommendations of Astro2020 pertaining to DOE and DOE's in-progress efforts to address them.

Questions & Answers:

Q: Priya Natarajan asked about CMB-S4 and advisement on partnerships.
A: Kathy Turner responded that it should be either 60/40 or 50/50 NSF & DOE.

Q: Ann Zabludoff asked about what advice the DOE wants from the AAAC. She was interested in hearing where the strategic obstacles are for DOE. She was also curious about the process by which the assessment of programs addresses strategic goals.
A. Kathy Turner answered that the AAAC can highlight where NSF, NASA and DOE are working together most effectively. Another focus would be to monitor the response to the Decadal Survey. She believes they are just at the start of the process since the Decadal Survey report was recently published. The comments of the AAAC published in the annual report will have the body of their advice. Each agency will have unique perspectives. Priya Natarajan interjects that the AAAC wants to initiate the discussion about how each agency will address survey recommendations and identify low hanging fruit for process efficiency improvements.

12:45 NASA/APD Programs and Budget Update – Paul Hertz

Summary: Paul Hertz announced NASA Astrophysics' new Deputy Division Director, Sandra Cauffman, as well as an overall update on NASA personnel and the FY22 budget. Paul proceeded to give an update on the James Webb Space Telescope (JWST) launch and its deployment progress; Eric Smith will provide more detail in a separate presentation. Throughout the presentation[3], Paul shared the actions that NASA

has taken regarding the responses to the recommendations of the 2020 Decadal Survey and how technology investments are being made for future missions. NASA is prioritizing an inclusive and diverse astrophysics community and is initiating changes to address systemic failures that limit participation by all. Paul Hertz concluded his presentation by announcing that he will be stepping down this year after more than 10 years as the Director of Astrophysics.

Questions & Answers:

Q: Priya asked about the future Great Observatories program in terms of precursor science, what is the element, is it funding for exploratory studies?
A: Paul responded that the workshops are to flesh out the scientific ideas that will motivate the Great Observatories. For example, the decadal report noted that a six-meter space telescope would be adequate to characterize 25 potentially-habitable exoplanets. Another example might be precision radial velocity. How are we going to find the targets for an exoplanet characterization mission? Does that mission have to be responsible for finding its own targets? Or can we find those targets from the ground before we launch it? That will have a direct impact on the design of the mission. That is what NASA means by precursor science.

Q: Priya asked if there is guidance on creating a policy for open-source software for crediting? Will the policy document discuss how to give credit to teams and individuals who develop software that are then made public?
A: Paul said it's not in the policy document and explains that the policy document is terse. It leaves a lot of room for answering questions like that without prescribing the answer. Although, that is something that has been discussed, Paul doesn't have anything to add to the discussion since it's not discussed in SPD 41.

Q: Michael McCarthy, AAAC Committee member, said that given the fact that there's concerns about the Continuing Resolution (CR) going through the entire fiscal year, how would that impact NASA's ambitions? How would that impact projects in a general sense or specific sense?
A: Paul responded that NASA is optimistic that they'll get a full year appropriation. It would be an omnibus appropriation at this point, and it's known that the appropriation committees are working towards that. Under a full year CR, NASA is told to stay at the same top line as they were at last year, but the money can be moved around within that top line. Every single project doesn't have to receive the same budget this year that it received last year. The main restriction under a CR to Paul's understanding is that you can't cancel programs and you can't start new programs.

Q: Kyle Dawson, AAAC Committee member wants more clarification on Slide 26 pertaining to Community Groups in response to Astro 2020 and the specifically the second item, "exploring mechanisms to improve coordination among U.S. archive centers …" This is a possible working group, what does that mean? Does that mean it's coming down at the initiative of the agencies?
A: Paul states that the first step for the archives will be an internal working group where NASA, NSF and DOE get together their civil servants and their contractors that run their data centers and discuss mechanisms to improve their coordination. They will be reporting out to advisory groups, and for NASA, all their archive centers have user groups.
Q: Kyle asked for one or two examples of these working groups that have occurred in the past and something that's been seen to help calibrate what to expect?
A: Paul states that the NN-EXPLORE program was started between a NASA and NSF internal working group.

Q: Regarding the third bullet point, “convene a broad panel of … experts in laboratory astrophysics …”, Kyle asked why would NASA be suggesting a task force through the AAAC committee?
A: Paul said NASA believes that the decadal survey wanted this panel to provide advice to the agencies on what they should be investing in. To receive advice, it must come in through a chartered Federal Advisory Committee. Rather than creating a brand-new committee, the most straightforward way to do it is to have the AAAC establish a task force and then have that task force provide recommendations through the AAAC Committee. Lastly, the AAAC committee would then provide those recommendations to the agencies.

Q: Kyle asked why the recommendations are not the same for both “exploring mechanisms to improve coordination among U.S. archive centers …” and “convene a broad panel of … experts in laboratory astrophysics …”?
A: Paul said it is because “exploring mechanisms to improve coordination among U.S. archive centers …” has to do with them improving their internal processes. The decadal survey explained how things needed to be improved. Right now, it is not necessary for community input on that. We see that as a place where we need to get together and do a better job of what we're already doing with the resources that we already have. NASA sees “exploring mechanisms to improve coordination among U.S. archive centers …” as the Agencies working internally, helping to better deliver services to the community, whereas “convene a broad panel of … experts in laboratory astrophysics …” is letting the community provide advice on how agencies should change their direction and the priorities of their program.

14:30 Astro2020 Decadal Report - Fiona Harrison, Rob Kennicutt

AAAC Chair Priya Natarajan introduces Fiona and Rob

Summary: Fiona Harrison and Rob Kennicutt briefed[4] the committee on the results of the Decadal Survey on Astronomy and Astrophysics 2020 by the National Academies of Sciences, Engineering, and Medicine.

Topics covered in the briefing included the launch of the James Webb Telescope, Pathways to Habitable Worlds, and research areas such as Time Domain Multiwavelength and Multi-messenger Imaging of the sky, New Windows on the Dynamic Universe, and discovery areas on the agenda of the coming decade.

Other topics included The State of the Profession, recommendations to improve participation and retention, meetings with Congressional staff and House committees on inspiring young people to join the workforce, the NIH model to mitigating privacy concerns in referencing reporting demographic data on workforce diversity, diversifying astronomy teams, the prevalence of harassment and discrimination (race and gender) in the astronomy and astrophysics community; and it’s occurrence being treated on par with scientific misconduct, and lastly, bridge programs between undergraduate education and graduate education to influence the entrance into professional ranks.

Questions & Answers:

Priya – Do you have any advice that would be useful to consider?

Rob – Within our committee, our Executive Officer Rachel Osten, has built up case experience for where the bottlenecks are.

Fiona- NASA was more forthcoming with providing information.

Rob – The NSF's concerns were at a higher level.

Priya – Get advice from the General Counsels of agencies.

Kyle Dawson – On the science side, what are the obstacles that exist in Astrophysics?

Rob- Each agency has its programs.

Kyle Dawson – Are there any obvious fields that we are missing out on?

Fiona – X-ray Astronomy.

Kyle Dawson – On the professional development side, Priya brought up the demographics; on the harassment case you brought up scientific misconduct. Do you have examples of other agencies that have navigated those challenges?

Fiona – The National Academies. Paul Hertz notes that the National Academies is not a Federal Agency. It is not bound by the laws and regulations that bind NASA, NSF, and DOE.

16:00 The Astro2020 Report: A Discussion

Priya Natarajan encouraged the committee to engage in the last hour discussing their takeaways from the Decadal Survey. Each Committee member was asked for their main impressions:

- **Deirdre Shoemaker** – Gravitational Waves (GWs) and the realization of Multi-Messenger Astronomy (MMA) were a focus of the report. Contributions and collaboration from all the Agencies will be required to fulfill scientific potential.
- **Abigail Vieregg** – A major science case links together GWs, particle physics, and the electromagnetic spectrum. However, the report pushed GWs and particle physics onto NSF PHY predominantly. This is perhaps based on historical context rather than the science needs going forward.
- **Wenda Cao** – was most concerned about people retention. The solar physics division is shrinking because of lack of jobs. Increased development of early careers is needed. NASA and NSF should increase their support.
- **Nikole Lewis** – brought attention to the difficulty in finding funding on the boundaries of astrophysics and planetary science. The Agencies should not duplicate effort; laboratory astrophysics in particular.
- **Alexie Leauthaud** – was concerned about the impact of climate change on the profession how to reduce footprints from travel and facilities, and raising awareness of the issues through education. She asked whether the Agencies should develop mitigation plans together.
- **Nancy Chanover** – drew attention to Lab Astro activities falling through the funding cracks and asked where lab data should find a home and how to make such data discoverable and employable.
- **Ann Zabludoff** – Asked what does the AAAC evaluation process of Astro2020 progress look like? Is there a mapping of recommendations, a living document, maintained by the agencies? Can the roadblocks to meeting the recommendations be shared?
- **Kyle Dawson** – Asked what is budget-dependent and what is immediately actionable? Lab Astro is a tractable problem that the AAAC can immediately develop recommendations for. The same is true for demographics. Other recommendations are already ongoing or are for the future, so are higher hanging fruit for the AAAC.

- **Priyamvada Natarajan** – Described a vision for potential AAAC task forces on the topics of Demographics/DEI, data consolidation, and Lab Astro.

Paul, Kathy, and Debra provided open-ended questions to help the AAAC develop their report and strategize future advice. These recommendations will be important for agency directors:

- How effectively are the Agencies working together?
- Are there other areas of science that would benefit from cross-agency collaboration?
- DEI efforts are fragmented and advice will be helpful.
- Climate change impacts and actions, Lab Astro, and data centers may be the next big topics requiring advice.
- What cross-agency partnerships are needed to encourage the professional development of a new workforce?

16:50 Priya Natarajan adjourned the meeting for the day.

DAY 2; JANUARY 26, 2022

11:05 NSF/AST Programs and Budget Update - Debra Fischer

Debra Fischer welcomed the Committee and audience and introduced herself as the new AST Division Director. She presented[5] updates about the NSF-funded facilities, as well as award funding rates through the past years. The presentation addressed the various Astro2020 decadal recommendations for NSF and that the Division is still brainstorming how to take actions from the report. She shared information about the Division's organization, including grants, MREFC, and how the Agency's budget is formulated.

Questions & Answers:

Kyle asked about the decadal panel's recommendation topic on the demographic data collecting and how the Committee can form a task force.
Paul replied that a task force can be requested by the Committee, and noted that the task force does not need to include Committee members, and can have multiple Committee members with that group. Paul also noted that the task force cannot report directly to the agencies, but to the AAAC. Another distinction of the task force is that there is no charter, unlike the AAAC, only a charge. The NIH model was proposed as a topic the task force can focus on regarding demographic data collecting pain points and the like. A goal of having a list of task force (also called subcommittee) members by January 2023's meeting was agreed upon, with its goal to optimize transparency, as well as considering a workshop with the community's input.

Alexie asked about Recommendation 10 (climate change).
Debra noted that this effort should encourage collaboration. Limiting travel can be tricky, especially for younger astronomers looking for networking opportunities and observatory experience. Alexie added that this topic can be a part of the subcommittee's charge.

Priya asked for more updates on Arecibo, which was not included in Astro2020.
Chris Smith replied that details are at the NSF-wide level and looking at interactions at AO and NSF.
Ashley Vanderley replied that the Lidar is still in operation, and discussions are in progress on what the

needs are with the University of Puerto Rico. She added that the University of Central Florida and the Observatory both have guidance for the next year and a half of their cooperative agreement on continuing with the science they can continue doing.

12:17 Update from NSF Physics Division - Denise Caldwell

Denise Caldwell gave a presentation[6] on the Division staff, budget and highlighted IceCube and its neutrino science and nuclear physics.

Questions & Answers:

Ann Zabludoff asked how coordination with DEI efforts on policy are made with AST and DOE?

Denise replied that there are MPS-wide activities, like AGEP (NSF's Alliances for Graduate Education and the Professoriate), LEAPS (Launching Early-Career Academic Pathways) and Ascend (Mathematical and Physical Sciences Ascending Postdoctoral Research Fellowship), which are DEI-focused programs. PHY does not want to overextend itself in programs and will focus on quality over quantity. Denise mentioned the other MPS Divisions having programs: CHE having Partnerships for Research and Education in Chemistry (PREC), DMR's Partnerships for Research and Education in Materials (PREM), AST's Partnerships in Astronomy & Astrophysics Research and Education (PAARE); PHY created Partnerships for Research and Education in Physics (PREP), therefore, MPS has a lot of internal coordination. Regarding other agencies, there are no formal arrangements for calls of activities or programs beyond advisory committees (HEPAP and NSAC).

Ann suggested that there be joint statements on DEI priorities. A discussion followed about a commitment on anti-harassment and ensuring women students are promoted equitably in the astronomy and astrophysics fields.

1:20 EST Webb Telescope Update – Eric Smith

Eric Smith from NASA's James Webb Space Telescope gave a presentation[7] on updates from the program.

Questions & Answers:

Priya asked Eric for the timeline of the Early Release Science (ERS).
Eric replied that it is a priority to get data to the community so all are better informed for Cycle 2. All the commissioning data becomes public once the commissioning period ends. All JWST data will be archived to the same place that Hubble's data go.

15:00 Diversity, Equity and Inclusion: A Discussion of Possible AAAC Support for Agency Activities

Summary: This discussion session discussed potential AAAC support for the agencies implementing recommendations from the Decadal Survey on publishing demographic data from proposals and awards. Priya Natarajan opened the discussion with observations from the Decadal Report on specific recommendations that encourage interagency participation between NASA, NSF, and DOE. Priya charged Paul Hertz and Debra Fisher with leading the discussion on how best to implement the recommendations from the Decadal Survey.

Kyle Dawson: If we charter a task force what is the process of forming the taskforce?
Paul Hertz: Task forces are requested by the agencies. Members of the task force do not have to be members of the AAAC. These task forces cannot report directly to the agencies. The task force operates as a subordinate group to a chartered advisory agency, reporting in this case to the AAAC.

Priya: The salient points of the study are to study the NIH model of demographic reporting and offer methods and methodologies for translating this to the needs of NASA, NSF, and DOE. A question is how has NIH navigated the landscape of federal rules and regulations. A suggestion is to include someone from NIH in this study.
Kartik Sheth: Recommended that the Committee not narrowly focus just on NIH to meet the purpose of astronomy recommendations.
Paul: Reminded the committee that NASA has commissioned a study at the National Academies on what kind of demographic data should we be reporting on.
Nicole Lewis: Reminded the Committee that Hubble were able to track demographic information.
Kathleen Turner: Any plan formulated will require broader DOE approval.
Paul: Added that a goal should be to help the agencies define the outcomes that the AAAC want from the Decadal Survey. The agencies do not have to do everything the same way. But NASA Astrophysics is not going to pick different outcomes from the rest of NASA Science. OSTP should be setting the standard for all Federal executive branch agncies.
Priya: Reminded the Committee that the annual report is sent to the OSTP.

Priya: For clarification of process, it would be useful for the Committee to understand the limitations of each agency for reporting demographic information.
Kartik: Suggests setting up a meeting with the purpose of getting over the obstacle of internal agency barriers.
Paul: Noted that fact finding does not have to be done in a public session.

Kyle: Asked who would write the charge and who would find the task force members?
Paul: The Agencies would do that.

Kyle: Suggested that a suitable timeline would be to reconvene at the June AAAC meeting with a draft charge and potential task force members identified.
Priya: Suggested that this would be the time to receive the go ahead and broad buy-in from each agency. An interim report could be requested by the June 2023 meeting.
Kyle: Asked, with a 1-year goal, can the charge be written in a way that is fact finding?

The conversation switched to Lab Astrophysics Decadal recommendations where Priya and Debra asked whether a working group should be stood up to look at the issues and recommend solutions.
Nicole: Noted that Lab Astro is interdisciplinary, not topical, and asked where should Lab Astro live within the agencies? Maybe a rethink of the process is required.
Priya: Added that perhaps a new funding line and a new program were merited.
Paul: Provided a recollection from the Decadal Survey to ask the community to give the agencies priorities to direct the existing funding along strategic avenues.
Priya: Added that it was desirable to harvest broader community input openly, transparently, and widely in the field.
Michael McCarthy: Added that there are very capable people within the community suited to such a task.

Nancy Chanover: Asked whether an RFI would do the job of community input?
Paul: Replied that the agencies could do an RFI, but the responses must be turned into priorities, requiring working group.
Paul: Indicated that the authority is there for the agencies to ask AAAC to sponsor a taskforce or ask the National Academies to put together an ad hoc panel and deliver a scientific study for the agencies.
Priya: Could the AAAC encourage the agencies to host such an open workshop? Constitute a sub-committee.

The conversation switched to climate change awareness where Debra asked should the agencies be funding travel under grant proposals?
Kyle: Opined that lack of travel is destructive to postdocs for networking and finding new jobs.
Kartik: Suggested asking students what their response would be.

16:00 NASA Planetary Defense Update - Lindley Johnson

Summary: Dr. Johnson highlighted[8] the five focus areas of the planetary defense effort: Assessing the threat (Center for Near Earth Objects Studies); search, detecting & tracking identified objects using space based and ground-based observations; characterizing identified objects; planning & coordinating a response; and mitigating the threat of impact.

Questions & Answers:

Q: Ann Zabludoff asked what is the cumulative chance of Earth impact?
A: Dr. Johnson responded that impacts are very rare. In the last century, a 20-meter object impact was the largest recorded. It is difficult to precisely estimate because it is a small statistics problem as impacts are rare. Of key importance is to catalog known NEOs for future predictions.

Q: Nancy Chanover stated that mega constellations of satellites can impact ground-based observations and wondered what Dr Johnson's office communications are with the satellite manufacturers.
A: Dr. Johnson responded that he has no direct communication with manufacturers. Most of the ground-based detection and observations are done in the dark sky, and so he doesn't see a sizeable impact to the discovery rate.

16:06 EDT Committee Discussion

Priya Natarajan gave special thanks to all AAAC members, agencies, and speakers.

Astro2020 Decadal Discussion Continued:

Priya suggested that the AAAC Committee recommend NSF, NASA, and DOE organize a workshop and invite people from the community to solicit input on what are all the interesting questions, then provide materials for a task force to help prioritize. Priya asked if others have any suggestions or reactions to this. Priya asked agencies whether this recommendation is reasonable to have agencies charged with organizing a workshop collectively?

Debra Fischer responded that she would like to hear from other people about whether that is a good path forward, but does see that having input from the broader community would be useful. Debra opined that when AST responds to proposal pressure and the proposals with the most scientific merit are awarded,

they are not necessarily building a strategically meaningful, collaborative, cooperative, coordinated network.

Regarding laboratory astrophysics, Ann reminded the Committee that the decadal survey suggests that NASA and NSF should convene a panel of experts to identify what laboratory data is needed to support next generation observatories and identify the resources that can be brought to satisfy those needs and consider new approaches for building the requisite databases. Ann agreed with the recommendation and that it should be possible for the three agencies to implement on a short timescale with that specific goal in mind.

Debra agreed that this recommendation is very actionable, and AST has had discussions about forming groups with NASA.

Willie Rockward, AAAC member, emphasized that while looking for the top science and new generation ideas, information must be gathered where the community gathers and not just through standard avenues. This means including the organizations such as National Society of Black Physicists and National Society of Hispanics Physicists, etc.

16:10 Topics for Future Meetings; Any Other Business

Priya would like to include on the agenda for the next meeting in February a follow up discussion on climate change. Debra reminded the committee that it does not have to recommend a 100% solution. First steps could be having a goal of reducing carbon emissions by 30% and maybe another target by 2035 and so forth.

Abigail Vieregg, AAAC member, questioned how do they evaluate where to start and what are most important things to discuss first concerning climate change?

Kyle asked the panel what their schedule is for the next two months, because they have to start writing the report and how do they want to organize recommendations?

Priya suggested that they take recommendations that were made in the decadal, try to parse them into short-term and long-term actionable items, and tailor in those discussions that were had during the AAAC meetings. Perhaps in the February meeting, the committee could ask the agencies for guidance on the report regarding the specific recommendations.

Martin emphasized the deadline date (March 15, 2022) for the report and the importance of delivering the report on time.

Elizabeth Pentecost provided advice on preparing the report sooner than later and suggested that the committee review previous AAAC annual reports that are on the AAAC web site.

Priya told committee members to expect a link to a Google Document for them to start structuring the annual report.

Ann said she would like all three agencies to map their current and planned initiatives to address each of the Decadal recommendations. Places where those initiatives are joint or overlapping should be noted. She also recommended that the report identify where more or different progress could be made on satisfying those recommendations.

Martin reminded the committee that all presentations will be uploaded to the AAAC webpage.

Nancy Chanover commended all three of the agencies for all their contributions with the discussions of what they'd like to see, what they've already implemented, where they'd like to be going, and what they'd like help on. Nancy continued by expressing her excitement to hear from all the agencies and to learn about what's already underway.

Priya stated that it has been very impressive to see the agencies engage with each other on the recommendations and it really made the meeting fruitful, with the decadal report having been released at the end of November 2021.

Allison Farrow provided information regarding the selection of dates for the June and September AAAC meeting.

17:00 Meeting adjourned.

Presentation slides:

1) https://www.nsf.gov/attachments/303934/public/1_AAAC_Welcome_Charge_Martin_Still.pdf
2) https://www.nsf.gov/attachments/303934/public/2_DOE_HEP_Program_Budget_Update_Kathy_Turner.pdf
3) https://www.nsf.gov/attachments/303934/public/3_NASA_Program_Budget_Update_Paul_Hertz.pdf
4) https://www.nsf.gov/attachments/303934/public/4_NAS_Astro2020_Decadal_Report_Fiona_Harrison_Rob_Kennicutt.pdf
5) https://www.nsf.gov/attachments/303934/public/5_NSF_AST_Program_Budget_Update_Debra_Fischer.pdf
6) https://www.nsf.gov/attachments/303934/public/6_NSF_PHY_Program_Budget_Update_Denise_Caldwell.pdf
7) https://www.nsf.gov/attachments/303934/public/7_Webb_Telescope_Update_Eric_Smith.pdf
8) https://www.nsf.gov/attachments/303934/public/8_NASA_Planetary_Defense_Update_Lindley_Johnson.pdf