CAPTEM Minutes

Minutes of the Fifty-third Meeting of the Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM)

Held virtually on Wednesday, November 8th, 2017

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1. Agenda for Fall 2017 CAPTEM Meeting, November 8th

2:00 pm
Welcome and roll call (McKeegan)

CAPTEM: Kevin McKeegan (Chair), Conel Alexander, James Day, Juliana Gross, Jeff Grossman, Munir Humayun, Hope Iishi, Noriko Kita (non-voting), Sam Lawrence, Francis McCubbin, Larry Nittler, Elizabeth Rampe (Secretary), Devin Schrader, Rhonda Stroud, Jeff Taylor, Allan Treiman, and Arya Udry.

Others attending: Judy Allton, Michael Calaway, Dave Draper, Cindy Evans, Marc Fries, Rachel Funk, Carla Gonzalez, Andrea Harrington, Darren Locke, Jeff McQuillan, Andrea Mosie, Keiko Nakamura-Messenger, Lisa Pace, Aaron Regberg, Kevin Righter, Melissa Rodriguez, Carol Schwarz, Christopher Snead, Kim Willis, Ryan Zeigler, and Mike Zolensky.

Approval of minutes from Spring 2017 meeting (McKeegan, Rampe)

Status of action items from last meeting (McKeegan)

2:15 pm

NASA HQ briefing (Grossman)

2:30 pm

JSC organizational report; facility updates (Evans, Pace)

2:45 pm

JSC Astromaterials curation report (McCubbin, 15 min.)
Advanced curation: microbial ecology of JSC labs (Regberg, 10 min.)
3:10 pm

Curator/Subcommittee reports and issues needing attention/action (~5-10 min each)
- *MWG curatorial/allocation report (Alexander/Righter)*
- *Stardust curatorial/allocation report (Stroud/Zolensky)*
  - *Preparation for 10-year review (discussion)*
- *Cosmic Dust curatorial/allocation report (Ishii/Zolensky)*
  - *Recalls of cosmic dust (discussion)*
- *Microparticle impact lab (Zolensky)*
- *Hayabusa curatorial/allocation report (Humayun/ Zolensky)*
- ----- *5 minute break* ------
- *Asteroid Sample Return Updates*
  - *OREx updates (Righter)*
  - *Hayabusa 2 updates (Nakamura-Messenger)*
- *Genesis curatorial/allocation report (Nittler/Allton)*
- *Lunar samples curatorial/allocation report (Treiman/Zeigler)*
  - *Reduction in Apollo sample requests (Zeigler)*

Informatics report (Lawrence)

4:25 pm

Spring CAPTEM Schedule (McKeegan, Rampe)

- March 17-18 at LPI, immediately preceding LPSC
- MWG and Lunar allocation meetings times and locations TBD

CAPTEM charter: discussion and vote (McKeegan)

CAPTEM membership rotations as of January 1, 2017 (McKeegan)

- Thank you Conel Alexander for your very effective service on CAPTEM! Noriko Kita to take over as subcommittee chair for MWG.
- Considerations for new CAPTEM members and subcommittee members

New Business?

Summary of action items (Rampe)

5:00 PM

Adjourn

2. New action items from this meeting

(1) Create a small committee to think of ways to improve the Stardust catalog and feedback between Curation, PIs, CAPTEM (Stroud, McCubbin).
(2) Update the Cosmic Dust webpage so that PIs can specify whether the analyses will be destructive or not in the request (CD Subcommittee).
(3) Assemble CAPTEM subcommittee and review OSIRIS-REx and Hayabusa2 curation plans.
(4) Review draft of Mars Curation plan from Andrea Harrington.
(5) Draft and review policies on sample preservation and conservation (each subcommittee) and circulate to CAPTEM prior to Spring 2018 Meeting.
(6) Review membership spreadsheet, send corrections to Kevin, and put forward names for new members (subcommittee chairs).
(7) Arrange a time for each subcommittee to meet prior to Spring 2018 Meeting, if feasible.
(8) Elect a CAPTEM Vice Chair.

3. Welcome and roll call (McKeegan)

Approval of the Spring 2017 Meeting Minutes: Motion approved unanimously.

Disposition of action items from last meeting:

Action item 1: CAPTEM will continue to anticipate working with NASA Headquarters on developing an investment strategy for needed future analytical capabilities and facilities, following

delivery of the NRC study. The NAS will be performing a similar study. Distribute announcement of NAS meetings within CAPTEM so that members can read minutes from meetings.

Resolution: CAPTEM is still anticipating working with NASA HQ on developing this investment strategy. Kevin will give a 30 minute overview of CAPTEM to at the NAS meeting, Extraterrestrial Sample Analysis Facilities, in Irvine on Nov 20th. He will contact CAPTEM members for contributions. Kevin will also distribute the announcement of NAS meetings to CAPTEM members so that members can read the minutes.

Action item 2: Update process for allocating Stardust samples to the community. Need to survey the PI community to characterize frustrations with the process of requesting samples and find out how better CAPTEM can serve them (Stroud, McCubbin).

Resolution: Will create a small committee in January to address this.

Action item 3: Review the Stardust website.

Resolution: Stardust database is actively being fine-tuned.

Action item 4: Determine the rate and method of delivery of Hayabusa particles (Zolensky).

Resolution: 10% of total return coming to JSC no later than 1 year after return of Hayabusa 2. JAXA and NASA will develop a mutually agreed Joint Sample Exchange Curation and Analysis Plan. JSC Curators will visit JAXA Curation facility next year to begin work on this plan.

Action item 5: Organize data from previous studies to evaluate requests for Genesis samples (Allton, Nittler).

Resolution: Curation is beginning to organize a compendium of science results.

Action item 6: Find new members to serve on the Genesis Subcommittee.

Resolution: Sarah Crowther will be added to the Genesis Subcommittee.

Action item 7: Informatics Subcommittee members should continue to assess the online catalogs because many have been updated recently.

Resolution: The Informatics Subcommittee continues to assess online catalogs.

Action item 8: Identify the community standards for reporting results from extraterrestrial materials by surveying the community (Informatics Subcommittee, Treiman, Zellner, Gross, with Grossman as an advisor).

Resolution: This action item is pending. The community will be surveyed about data formats and data retention and storage practices. This will be discussed further at the Spring 2018 CAPTEM Meeting.

Action item 9: Contribute ideas to celebrate 50th Anniversary of Apollo samples to Google Doc that will be set up by McKeegan.

Resolution: This action item is pending. Kevin will set up a Google Doc and solicit ideas from CAPTEM members.

Action item 10: Investigate costs and logistics associated with changing the spring 2017 CAPTEM meeting to the Saturday before LPSC (McKeegan).

Resolution: There are too many logistical problems involved with moving the meeting to the weekend before LPSC, so the Spring CAPTEM Meeting will remain on the Saturday after LPSC.

Action item 11: Send requests for MWG chair.

Resolution: Noriko Kita will take over as subcommittee chair for MWG.

Action item 12: Find a date for virtual fall meeting.

Resolution: Wednesday November 8th, 2017

4. NASA Headquarters report (Grossman)

There has been some redistribution of funding within planetary R&A, but the sample community will not be affected and there will be no changes to the LARS program.

The meteorite WG reported that NSF will be renovating McMurdo, which may cause delays and changes in the ANSMET schedule. ANSMET is still deploying this field season.

The study by the NAS on lab capabilities and facilities is just getting started. The schedule of the report is not yet known. The first meeting of the Committee on Extraterrestrial Analysis Facilities is on 20 November 2017.

NASA has changed the way civil servants at NASA centers will be supported to do research. Each center has created work packages. The research included in the packages will be peer reviewed, but it is outside of competed ROSES proposals. It is not clear how this will affect CAPTEM. It could change how scientists in the community compete for new laboratory instrument facilities.

5. JSC organizational report and facilities updates (Evans, Pace)

JSC and ARES Update

ARES scientists are leading geoscience training of the 14 new NASA and CSA astronauts. They are also supporting the rollout of the Deep Space Gateway and transport concept for Orion and SLS.

Vanessa Wyche is the current acting JSC Deputy Director, after the previous Deputy Director, Mark Geyer, moved to NASA HQ to support HEOMD. Eileen Stansbery completed her service as Acting Deputy Chief Scientist and is now back at JSC as Acting Director for the Exploration Integration and Science Directorate.

The 50" of rain from Hurricane Harvey in August 2017 did not impact JSC facilities.

Chris Snead, Keiko Nakamura-Messenger, and Melissa Rodriguez led a small sample training workshop with the LPI, which was very successful.

ARES Facilities Updates
SMD approved $9M for FY19 to build Curation laboratories in building 31E. ARES is beginning to move some laboratories to building 29. The long-term plan is to continue to occupy 31E and 31N (the Lunar Sample Curation Facility) and to occupy the majority of building 29 to allow for the demolition of other buildings that ARES currently occupies. ARES is proposing the construction of an annex to building 31, which would allow for the demolition of the building 31 hi-bay.

OSIRIS-REx/Hayabusa2 curation facility designs are complete. Construction will occur in 2019-2020 in building 31.

An Advanced Curation and cleaning facility will be built in building 31E from 2019-2020. The design is 30% complete.

Building 31's nitrogen system has been improved to provide consistent filtration throughout all labs, to prevent backward contamination, and to protect the system in case of a hurricane.

Building 31's ultrapure water system was improved by adding an upgraded monitoring system and installing better hardware. A system designed to accommodate higher volumes is currently being designed to support the future Curation labs.

6. JSC Astromaterials curation report (McCubbin)

Updates to the Office
Dr. Kevin Righter was named deputy manager of the Astromaterials Acquisition and Curation Office. Suzanne Summers retired as the Astromaterials Acquisition and Curation Office Secretary, and Toni Townsend was hired as the new Secretary. Dr. Julie Mitchell will be joining Advanced Curation in January 2018. Marc Fries will take over for Michael Zolensky as Cosmic Dust Curator. Andrea (Andi) Harrington has taken over for Francis McCubbin as the Mars Sample Curator.

Curation Support to New Missions
Construction for OSIRIS-REx and Hayabusa2 labs will begin in FY 2019.

Andi Harrington is working on a curation plan for archiving witness materials and coupons for Mars 2020. A draft of this plan will be ready for CAPTEM review in the next few weeks.

Francis McCubbin continues to serve as ex-officio member of the Mars 2020 Return Sample Science (RSS) Board and is chairing the Contamination Control and Planetary Protection Working Group (CCPPWG) for Mars 2020. The CCPPWG was tasked by NASA HQ to determine the implications for sample science resulting from contamination control and planetary protection practices and to make findings about any potential issues.

Allocation highlights since November 9th 2016
Four Stardust allocations were worked and six samples were allocated, including one entire cell. 41 Cosmic Dust samples and three Hayabusa samples were allocated. LDEF samples were allocated to one investigator. 23 Genesis flown samples and 10 non-flight reference samples were allocated. 529 Apollo samples were allocated and 451 Apollo samples have been returned. 676 meteorite samples were allocated to 71 PIs. 222 new meteorites were announced in the Fall 2017 newsletter. JSC received 220 samples from the 2016-2017 ANSMET season in March 2017. A total of 1289 extraterrestrial samples were allocated in 2017. The 10-year average is 1436/year. There are six pending meteorite requests, 12 pending Apollo requests, one pending Cosmic Dust request, and one pending Genesis request.

Outreach highlights
Over ten-thousand people have benefited from educational disk and outreach programs. In FY17, there have been 47 sample disk certification workshops. Since October 2016, 659 disks (355 lunar/304meteorite), 35 thin section packages, and 722 Lunar and Mars soil simulant sample packs have been on short term loan to educators, museums, and students. 44 public outreach displays have reached over 11,771 teachers, students, and members of the public. Many social media sites feature Astromaterials (including Facebook, Twitter, Instagram, and a blog *myares.wordpress.com*).

Small Particle Sample Handling Training
This training is hands-on and includes fabrication of glass microneedles for handling particles <20 μm in diameter; practicing hand transfers of particles 20-200 μm in diameter; training on the MicroSupport AxisPro Micromanipulation System, ultramicrotomy techniques, and methods for mitigating triboelectric charging of samples during transfer; and curator presentation on sample catalogs and discussion of writing effective sample requests.

Updates on Advanced Curation
Aaron Regberg is investigating the microbial ecology of curation labs and has found that clean does not mean sterile. Organisms identified in the curation labs and associated systems have the metabolic potential to alter geologic material in unpredictable ways so that monitoring and mitigating biologic contamination will be important, especially for OSIRIS-REx.

Andi Harrington has performed a toxicological assessment of extraterrestrial dust relative to mid-ocean ridge basalt using six meteorites from the Moon, Mars, and asteroid 4Vesta. She found statistical differences in cardiopulmonary responses and developed an acute inhalation risk model

based on geochemistry. Andi is currently working on an acute toxicological risk assessment for carbonaceous chondrites.

Marc Fries has built and function tested the Opera prototype, which uses a trio of Quartz Crystal Microbalances to measure organic and particulate contamination, in anticipation of Mars Sample Return needs for simple, self-contained contamination monitoring cleanrooms, ATLO, and Sample Return Capsule recovery operations. Opera will be deployed in ARES cleanrooms to monitor for contamination and compare with other methods of cleanroom monitoring.

Chris Snead is performing contact pad tests for OSIRIS-REx using Allende and basalt powders as asteroidal dust simulants. For the Allende simulant, he found that numerous clusters of fine-grained particles were dispersed over the entire contact pad surface with several larger (>100 μm) particles wedged between wire loops, which could present extraction challenges. For the basalt simulant, he found that the contact pad was dominated by larger (>100 μm) particles, which may be a result of the lack of fine particles in the simulant or a reduced organic component in the dust.

7. Advanced curation: microbial ecology of JSC labs (Regberg)

Aaron Regberg sampled three locations within the Meteorite Lab (inside the flow bench, table, and floor) using multiple tools (biskit, foam swab, wet polyester swab, and dry polyester swab) to characterize the microbes in the lab. He used both culture-based and culture-independent methods. He identified bacteria and fungi on the floor and table and fungi inside the flow bench using culture-based methods.

Aaron also characterized the geomicrobiology of the ARES $N_{2(g)}$ filters (0.3 μm pore size, installed ~1979 and 1 μm pore size upstream, installed in 2006). He found bacteria and fungi associated with both filters using culture-based methods.

Aaron concludes that although the labs are "clean," they are not sterile. Still, he remarked that this is not a big problem, but is something to be aware of. It is important to remember that the meteorites have already been exposed to Earth environments and fungi and bacteria associated with them. Fungal contamination may be the primary concern in Houston. The organisms he identified can alter geologic material in unpredictable ways. He will do further DNA sequencing to provide a more detailed description of unculturable oligotrophs, and Aaron Burton will do LC-MS of cultivated fungi to provide information on amino acid production and alteration.

The sterilization and cleaning process is a part of Advanced Curation, and the procedures for sterilization are under development.

8. Curator/Subcommittee reports and issues needing attention/action

MWG curatorial/allocation report (Righter)
676 samples were allocated to 71 PIs. 222 samples were published in the Fall 2017 newsletter. 295 samples were transferred to the Smithsonian. ~220 new specimens were collected from Elephant Moraine by the 2016-2017 ANSMET team.

A new database was completed last fall, and it is being used for initial processing, newsletters, requests, allocations, inventory, and loan agreements.

45 new requests were received for the Fall 2017 CAPTEM meeting.

The 2017 inventory was initiated on 31 October 2017.

The MWG chair is being transferred from Conel Alexander to Noriko Kita.

Stardust curatorial/allocation report (Stroud/Zolensky)
The number of requests was in the single digits, and two were considered this year. A PI received a sample that was too small for analysis, so new samples will be allocated to that PI.

The database is being reviewed and fine-tuned.

The catalog and the feedback between Curation and PIs and CAPTEM need to be improved. A small committee will be assembled to address this in January. Francis and Rhonda will lead this committee.

Two new keystones were allocated to Westphal for PET (Preliminary Examination Team). PET is gradually declining and Mike doesn't expect any new allocations for PET.

Cosmic Dust curatorial/allocation report (Ishii/Zolensky)
The Subcommittee membership remains unchanged: Ishii (chair), Messenger, Flynn, Wozniak, Taylor, Djouadi-Bouali. The longest-serving member will likely be replaced in the next year or two.

The Subcommittee made recommendations on two cosmic dust requests, including 11 particles.

Marc Fries will take over for Mike Zolensky as Cosmic Dust Curator.

The 21st catalog was just published, and the annual cosmic dust inventory is underway.

ER2s and WB57s are still flying, but there have not been any flights in the last three months because Ellington Field was flooded during Hurricane Harvey. One expanded polyurethane collector and one C-nanotube collector have been flying. They are timing collections around meteor showers.

10 collectors were sent to White Sands Test Facility last month for curations. These collectors span 36 years of collection and they have at least 40 hours of collecting time.

The CD Subcommittee would like to collect information from PIs about the analyses they are doing, but there is no man power to complete this work. Mike asked CAPTEM how to best balance collecting information from PIs and working on the catalogs. Kevin suggested that the CD Subcommittee require PIs return their findings so that the Subcommittee members don't have to search for this information themselves.

Recalls of cosmic dust (discussion)
The suggestion is that the CD Subcommittee should be able to recall samples that are not degraded. A similar protocol is followed for Stardust and other collections. There were no objections. The expectation is that samples will be returned after the investigations are completed, unless the samples were allocated for destructive analysis or the samples were degraded. There is a need to retroactively determine whether samples were degraded during inventory, and this is ongoing.

Going forward, PIs must specify whether the analyses will be destructive or not in the request. This is not possible for entire collectors because these involve exploratory investigations. Questions were posed whether PIs need permission from CAPTEM if they identify samples that they will destroy and if NASA could recall grains from specific clusters. The Cosmic Dust Subcommittee will update the webpage and instructions for requests based on this discussion.

Microparticle impact lab (Zolensky)
There have been no recent allocations. The lab will be remodeled during the modifications to building 31. There is a comprehensive database back to 1985 for materials returned from space with impacts on them.

Hayabusa curatorial/allocation report (Humayun/ Zolensky)
The Asteroids Subcommittee had no new requests for samples. JSC has been promised 10% of the samples collected from Hayabusa. JSC is slowly receiving these samples as they are characterized. The Preliminary Examination Team effort has slowed as the Hayabusa2 mission has ramped up, so JSC is starting to receive uncharacterized particles. Mike expects JSC will receive particles at a faster rate and these will not have been handled much, making them less contaminated.

Asteroid Sample Return Updates
OREx updates (Righter)
OSIRIS-REx Launched in September 2016, looked for Trojan asteroids in March 2017 (none were found), and completed an Earth gravity assist in September 2017. Phase E activities completed in the last year include:

- Completing the archive of material collection (all 410 items, including coupons, lubricants, sealants, and paints, are at JSC in an ISO 7 cleanroom. A summary of the contamination knowledge will be published in Space Science Reviews by Dworkin et al.),
- UTTR kickoff meeting in July 2017,
- Finishing the cleanroom design process (co-located with Hayabusa2 cleanroom on second floor of Building 31),
- Updating the curation plan (the last update was in 2014 during mission CDR, and the new version includes MOU with international partners, archive collection, cleanroom design update, facility upgrades at JSC, and PE updates),
- Science team meetings in March and November 2017.

CAPTEM asked about the sample analysis plan and whether there should be CAPTEM involvement in its development. The plan is being written by Scott Messenger and Harold Connolly. It was determined that CAPTEM's role is related to curation plans, not analysis plans. CAPTEM has not reviewed the current OSIRIS-REx curation plan, so JSC will share it with

CAPTEM so that it can be reviewed before the Spring 2018 CAPTEM meeting. There was also discussion of talking to Harold Connolly about the curation plan ahead of the Spring CAPTEM meeting to figure out how to split samples such that CAPTEM receives representative samples.

Upcoming mission milestones include arrival at Bennu in Fall 2018, cleanroom preconstruction review in 2018/2019, construction in early 2019, sample analysis plan due in 2019, TAG/sample collection in July 2020, and cleanroom ORR in summer 2022.

The cleanroom will be ISO 5. It will be co-located with Hayabusa2 lab because of similar ratings and construction can be done at the same time. The design phase was completed in March 2017. Material trade studies (floor, walls, and epoxies) are under evaluation. The lab is expected to be complete in June 2020 to allow for outfitting, rehearsals, and monitoring. Multiple rehearsals are planned between 2019 and 2023 with hardware and/or samples. Later rehearsals will use the cleanrooms where appropriate.

At the science team meeting in March 2017, there was a splinter discussion about the curation plan, CK collection, and SRC filter testing. Chris Snead also presented a poster on his tests on grain removal from contact pads. At the science team meeting in November 2017, there was a poster showing the recent updates to the curation facility design.

Asteroid Sample Return Updates

Hayabusa2 updates (Nakamura-Messenger)

Hayabusa2 will collect material from three sampling locations on target 1999 JU3 (Ryugu) and will return at least 100 mg of total sample. Hayabusa2 will return to Earth at the end of 2020. 10% of unprocessed representative sample will be given to NASA JSC. The samples will arrive ~1.5 years before those from OSIRIS-REx. The MOU for Hayabusa2 states that 10% of the total sample collected will be delivered to JSC no later than one year after the return of the spacecraft. JAXA and NASA will develop a mutually agreed Joint Sample Exchange Curation and Analysis Plan for both the Hayabusa2 and OSIRIS-REx samples exchanged through the MOU.

The Hayabusa2 capsule will land in Australia. Volatiles will be extracted at the landing site, and the sample container will be taken back to the Institute of Space and Aeronautical Science (ISAS) in Japan where it will be opened in a vacuum. Some sample will be stored in vacuum and some with be divided into coarse and fine grains. JAXA is building a new sample processing glove box, which is a unique capability. JSC curators will visit the JAXA curation facility next year.

The NASA Hayabusa2 curators are developing a curation protocol. Chris Snead at JSC is working on a new micromanipulator for processing and handling small grains. Chris has also learned to separate particles in a glove box with an $N_{2(g)}$ atmosphere with no humidity and high static charge.

Genesis curatorial/allocation report (Nittler/Allton)

The Genesis Subcommittee is actively working on the issues identified in the Spring 2017 CAPTEM meeting, including 1) creating a compendium of science results as an aid to the review subcommittee and the community at large, 2) a Genesis materials compendium to capture information from the original science team on collector history and characteristics, and 3) synergy with the solar physics community. The subcommittee has also drafted a sample

preservation/conservation policy. These policies are needed for every collection, and existing policies will be circulated before the next CAPTEM meeting in March 2018 so they can be discussed at that meeting. A final outstanding issue is Sarah Crowther will be added to the Subcommittee.

New approaches for allocating and analyzing samples are being explored, including calibrating ellipsometry models using FIB/TEM cross-sections and correlating SIMS and Raman data. The subcommittee will open up more samples for allocation and will put 2x2 mm fragments onto the catalog.

Between March 2017 and November 2017, 10 Genesis-flown materials were allocated to three PIs and two non-flight reference materials were allocated to one PI. The JSC inventory was verified (4411 samples), and computer upgrades were completed.

The subcommittee submitted a request for a peripheral meeting the Sunday before LPSC.

One manuscript with Genesis results has been submitted to MAPS and one is in press in Ap. J. Lett.

Lunar samples curatorial/allocation report (Treiman/Zeigler)
The thin section lab is back up and running again with new cabinets and polishers. Bubbles developed in the epoxy, so new epoxy has been ordered. Processors are being trained to make thin sections.

The micro-CT lab operational readiness review will occur in the next few months. Apollo samples can be measured after a positive review.

Apollo thin sections are being reorganized into new cases. The previous cases held 7,000 thin sections, and the new cases will hold 18,000 thin sections. During the reorganization, the thin sections will be photographed and cataloged online. This process will take 1-2 years.

In the last six months, 310 samples were allocated (199 thin sections and 111 other samples). The Lunar Sample Subcommittee met virtually at the end of September to address sample requests (the meeting was virtual because of Hurricane Harvey). The Subcommittee received 17 requests for the Fall CAPTEM deadline. There are 12 open requests.

Three new members were proposed for the Subcommittee, including a new Subcommittee Chair, Juliana Gross. Jeff Grossman approved Juliana as the new chair.

ARES was tasked by HQ to draft a set of requirements for a PDS-like node for sample data generated by NASA funded sample research. ARES would not develop the repository, but would draft the scope of the repository and the types of data formats that should be included. The effort will be led by ARES personnel, but will draw upon community input and Sam Lawrence as the CAPTEM Informatics Subcommittee Chair.

Reduction in Apollo sample requests (Zeigler)

There has been a ~2 fold drop in the number of requests and the total number of samples being requested over the last year. Furthermore, the number of new PIs is decreasing. There have been three new PIs every six-month period, which is down from ~5-6 new PIs every six-month period a few years ago.

Informatics report (Lawrence)
There have been no changes to the Informatics Subcommittee membership.

The community survey on data formats and practices discussed at the Spring 2017 CAPTEM meeting was put on hold because the Planetary Science Division asked ARES to define requirements for a notional Astromaterials submission-based data repository for NASA-funded research. A community survey should be tied to this study. It will take time to complete this because it involves a complex combination of complicated issues, including types of data formats, identifying best data retention and storage practices from terrestrial examples, and making sure the requirements of the community are not too onerous. The Informatics Subcommittee will solicit the community for input and this will be discussed further at the Spring 2018 CAPTEM meeting. CAPTEM discussed whether the scope of this data repository should include samples returned from NASA missions or on terrestrial samples, meteorites, and cosmic dust, too and whether it would include future data to be collected or existing and future data. Will NASA provide funding to PIs to archive the data? The timeframe is one year to determine the requirements and scope of the database.

9. Spring CAPTEM schedule (McKeegan, Rampe)
The Spring CAPTEM meeting will be on Saturday 24 March 2018 (immediately following LPSC) at the LPI. Subcommittees should arrange to meet prior to Saturday, if feasible. MWG and Lunar allocation meeting times and locations are TBD.

10. CAPTEM charter: Discussion and vote (McKeegan)
A revised version of the CAPTEM charter was circulated previously. This was done because the structure has changed within NASA and CAPTEM needs to be responsive to those changes and because the number of members identified in the charters of the subcommittees does not correspond to the actual number of members. CAPTEM discussed the allowance of renewed 3-year terms for the Chair and Secretary. This will be considered further because there should be a review process before renewal, rather than selection because of inertia. Kevin would like to develop a procedure/culture so that official thank you letters are sent to subcommittee members to thank them for their service and allow new members to be selected. It was noted that CAPTEM needs to elect a vice chair according to the charter.

All were in favor of the new charter with minor typos. The charter was approved with no dissent.

11. CAPTEM membership rotations as of January 1, 2017 (McKeegan)
Sincere thanks to Conel Alexander for his very effective service on CAPTEM! Noriko Kita will take over as subcommittee chair for MWG.

12. New Business
Allan Treiman discussed two collections of IDPs from Antarctic stations and Antarctic micrometeorites collected by Susan Taylor and whether NASA/CAPTEM should be involved in

their curation. It was confirmed that these collections will be incorporated into the cosmic dust collection. Mike Zolensky has agreed to incorporate them with a new category. More discussion of incorporating these collections into the cosmic dust collection will occur at the Spring 2018 CAPTEM meeting.

13. Summary of action items (Rampe)

Create a small committee to think of ways to improve the Stardust catalog and feedback between Curation, PIs, CAPTEM (Stroud, McCubbin).

Update the Cosmic Dust webpage so that PIs can specify whether the analyses will be destructive or not in the request (CD Subcommittee).

Assemble a CAPTEM subcommittee to review the OSIRIS-REx and Hayabusa2 curation plans.

Review draft of Mars Curation plan from Andrea Harrington.

Each subcommittee should draft and review policies on sample preservation and conservation and circulate to CAPTEM prior to Spring 2018 Meeting.

Subcommittee chairs should review the membership spreadsheet, send corrections to Kevin, and put forward names for new members.

Arrange a time for each subcommittee to meet prior to Spring 2018 Meeting, if feasible.

Elect a CAPTEM Vice Chair.

Adjourn.