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NASA's Apollo Records Synthesis Project

A Cross-Disciplinary Archival Collaboration to Support
Crewed Missions of the Artemis Program



NASA's Apollo Records Synthesis Project

- NASA's Life Sciences Data Archive(LSDA)- Data repository group for NASA's Human Research Program (HRP): Research Data
- Lifetime Surveillance of Astronaut Health(LSAH)- Occupational health surveillance program for the astronaut corps: Clinical Data
- Goal: Digitize legacy media held in both groups' collections. The resultant data will then be used to support buying down human systems risks on upcoming crewed missions of NASA's Artemis Program.
- The joint team is utilizing each group's expertise to identify targets for digitization across both clinical and research records.
 - LSDA: Providing guidance on locating additional record sources and digitization of records.
 - LSAH: Subject Matter Experts (SMEs) on data needs to buy down human system risks on lunar missions.



More information about the project
can be found using this QR code



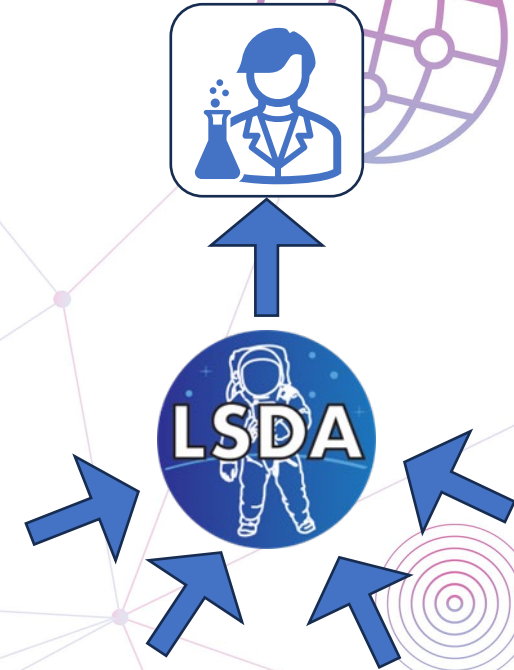
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Backup Slides

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NASA's Life Sciences Data Archive (LSDA)

- LSDA's Mission as a project is to collect, catalog, archive, and make accessible space life sciences research data funded by and/or relevant to NASA's Human Research Program (HRP)
 - HRP studies the impacts of space flight on humans to develop countermeasures for future exploration missions.
 - HRP sponsors research studies that are performed on ISS, in spaceflight analogs, and in other terrestrial locations.
- Researchers can request data from LSDA for reuse and secondary analysis
 - Data held by the repositories are privacy protected and release of these data for secondary purposes are managed to ensure that privacy of the participants is maintained.



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The Lifetime Surveillance of Astronaut Health (LSAH)

- Occupational surveillance program for the American astronauts corps.
- Monitors astronauts for occupational related injury or disease.
- Includes both active and former astronauts.
- Acts as the clinical data repository for NASA.



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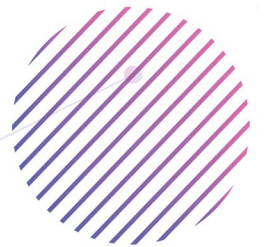
ARSP's Primary Record Source: The Space Life Sciences Archival Library (SLSAL) Collection

Collection Context:

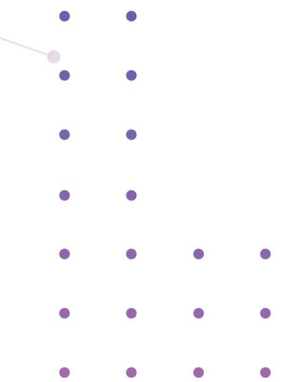
- SLSAL active 1975-c. 1981
- Primary task was collection and management of Skylab data (80% of collection) and provision of data to researchers
- Remaining 20% of collection consisted of material representing earlier crewed space flight programs and material related to the development of the Shuttle program
- Portions of the collection held by LSDA and LSAH

Collection Parameters:

- SLSAL assembled research data and related documentation: Raw and processed data from experiments; environmental data; planning and requirements documents; engineering documents; experiment documents; reports; still photos; reference materials.
- SLSAL was designed not to overlap with existing JSC repositories like its technical library (so, no contractor reports, few books and journals were collected).
- SLSAL was also limited based on medium: did not actively collect motion picture/kinescope film (users referred to the Audio Visual and Motion Picture Production Office to access film from Skylab); did not accept specimens (stayed with researchers).



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Challenges for Historic Apollo Biomedical Data

“Medical” and “Research” Categories

- Apollo-era approach thought about scientific research in terms of “biomedical” (anything to do with humans/crewed spaceflight) and “biosciences” (uncrewed spaceflight/most animal and plant research).
 - In practice: overarching concern was still “how can we keep people alive and functional in space,” so most research questions were also medical questions— lack of clear division between two categories as at present.

Priorities and Limitations of Apollo-era Research

- Space life sciences (both biomedical and bioscientific categories) research was backburnered due to cost constraints and priority shift after the Apollo I tragedy towards medical/preparedness-oriented work.
 - Apollo scientific program emphasized geology, research into lunar samples, research into how contact with lunar materials could impact Earth.
 - Small number of experiments on Apollo 16 and Apollo 17 inaugurated formal study of space radiation.
- Administrative silos: Office of Manned Space Flight conducted research on medical questions; Office of Advanced Research and Technology was meant to do technology/human factors-type research but was chronically underfunded.
- General quality issues: “Adequate controls were not always incorporated into each experiment, and exact replication was nearly impossible, so in-flight studies in this period sometimes produced confounded science and were not considered conclusive.”¹

¹Maura Phillips Mackowski, “Life Sciences and Human Spaceflight,” in *NASA’s First 50 Years: Historical Perspectives*, ed. Steven J. Dick (Washington, DC: NASA, 2009), 352-353.