After Sloan-V (AS5) Joining Document

Procedures for Obtaining Membership in After SDSS-V (AS5)

This document outlines operating rules and procedures for institutional membership in the After SDSS-V (AS5) project. These rules are being proposed by the AS5 Steering Committee for approval by the Astrophysical Research Consortium (ARC) Board of Governors. They govern the AS5 proto-collaboration for which seed fund contributions are being solicited, and the intention is that they will be incorporated into the AS5 Principles of Operation.

During the early stages of 2026, an Advisory Council (AC) will be formed to work with the Management Council (MC) to develop a draft of the Principles of Operation (i.e., the governing policies of the survey). Once the AS5 project is formed, some responsibilities of the MC will be transferred to the Advisory Council (AC), a body with representation from the institutional partners. After that point, changes to the Principles of Operation can be recommended by the Advisory Council for approval by the ARC Board of Governors.

The baseline AS5 is currently planned as a five year program, contingent upon sufficient funding. Observations are expected to begin in the time period of early to mid 2027 and ending in December 2032. The project will continue for up to 1 year after the end of observations to finish data processing and archiving. AS5 aims to execute a dual-hemisphere exploration of the distant, unexplored Milky Way and Local Group galaxies (specifically M31, M33, LMC, SMC, and other local dwarf galaxies) with high-, moderate-, and low-resolution spectrographs and integral field units. AS5 will also perform temporal spectroscopy on a wide range of time-varying astrophysical sources (both AGN, extragalactic and Galactic in nature). Observations would be conducted from both Apache Point Observatory and Las Campanas Observatory with the possibility of including up to 3 new telescope facilities (including two Northern hemisphere telescope facilities and one Southern hemisphere facility). A more detailed description of the programs within AS5 can be found in the AS5 Executive Summary white paper.

Participation in AS5 includes the entirety of the project. Hence, membership in AS5 provides institutions with access to all of the data, even if particular institutions or individuals confine their interests to a limited subset of the surveys.

Membership in AS5

Membership in AS5 is open to individuals and institutions. Benefits of membership include proprietary access to all AS5 data as well as the ability to participate actively in survey planning and execution.

A Participant at an AS5 institution is understood to be a long-term scientific staff member -- e.g. faculty (tenured and non-tenured), research-track scientist, or equivalent. In all cases, an individual Participant, postdoc, graduate student or other staff member is considered to be “at an institution” if at least 50% of their salary is paid by the institution.

<u>Full Institutional Membership</u> includes proprietary data rights for an unlimited number of Participants from the institution, and these Participants may sponsor an unlimited number of

postdocs or other short term staff from the institution and an unlimited number of graduate and undergraduate students enrolled at the institution. *Full Membership requires a total contribution of $1250K*. In most cases this membership fee will be paid either in annual installments over the lifetime of the project (see below) or as a lump sum, with details spelled out in the MOU between ARC and the institution. All partners are strongly encouraged to join as Full members.

To accommodate institutions that cannot commit to a Full membership, Associate Institutional Membership includes proprietary data rights for a specified number of Slots, where the *cost-per-Slot is set to one-fifth of the cost of a Full membership, i.e. $250K (NOTE all $ amounts are in USD)*. Typically, a Slot will cover one Participant and one postdoctoral researcher sponsored by the Participant, but this balance may be negotiated in specific cases. The Participants and postdocs at an Associate Member Institution are named rather than pooled. Participation rights can be moved from one researcher to another with the consent of the Director; the Director (and AC if necessary) has the authority to limit over-use of this flexibility.

A minimum of three Slots is required for an Associate Member Institution to have a vote on the AC and to have a representative on the Collaboration Council (CoCo). However, an institution may join with one or two Slots.

Participants may sponsor graduate and undergraduate students at their institutions who are working under their direct supervision, and they may also sponsor individuals employed by their institution who are within three years of receiving their first bachelor degree (e.g., individuals working for a year before going to graduate school or masters students). In addition to these sponsored individuals, postdocs and other professionals whose salary is paid in part or in full by AS5, or whose work is counted as an in-kind contribution, will also have data-access and other participatory privileges so long as they are spending the majority of their time on an activity acknowledged by AS5 to be of general service to the project.

Associate Member institutions may associate themselves together into Participation Groups (PGs) with the approval of the Director and the MC (or AC when it is formed). MOUs will be signed independently with each institution. Designation of a PG with three or more Slots total will allow the PG as a whole to have a single vote on the AC.

Other collaborative buy-in arrangements will be considered on a case-by-case basis if there are compelling and mutually beneficial reasons to do so. Membership in AS5 is recommended by the MC (replaced by the Advisory Council when that body forms) to the ARC Board of Governors. One criterion for membership is a tangible contribution to the construction or operating needs of AS5, as described below. Membership is formalized through Memoranda of Understanding (MOUs) between the institutions and ARC defining the contributions and the scientific participation, and agreeing to the Principles of Operation.

Our intent is to maintain the joining policies announced at this stage, including the contribution levels for members, without change into the Principles of Operation, as has happened in previous phases of SDSS. However, the possibility exists for them to be adjusted, with approval of the MC (or AC when it is formed) and the ARC Board of Governors, depending on the number of partners recruited and the success of other fund-raising efforts.

Contributions to AS5

AS5 member contributions for a full institution will total $1,250,000, intended to be paid according to the following schedule of seven payments or as a lump sum.

For Institutions wanting to follow a schedule the following schedule is preferred: An initial signing payment of $262,000 is due by February 15, 2027, or within 3 months of the MoU being signed. Seed contributions can be used towards this initial payment. Subsequent annual payments will be $247,000 due by October 31 of 2028, 2029, 2030, 2031, 2032. For Associate Institutional Members or Participation Groups, all payments will be scaled by a factor of 1/5 per Slot, as described above.

Contributions can be cash or in-kind and are measured in US dollars. All in-kind contributions need to specifically address items in the Director's budget and must have prior approval by the Management Committee (MC) and the (p)AC. All such details, including the schedule and value of in-kind contributions, will be elaborated in the institutional MOU with ARC. Only direct costs will be counted as in-kind contributions (i.e., including fringe benefits but excluding institutional overheads). Hardware and software developed previously for SDSS-I, -II, -III, -IV, or -V will generally not be counted as an in-kind contribution for AS5.

Each institution's MOU will define the penalties should the institution fail to fulfill a promised payment. Typically the penalty will be that the institution will forfeit their rights to data taken after the due date of the payment that is in default. Specific situations will be dealt with if and when they arise by the Director, the MC, and the AC.

Seed Funding / Shared Risk Early Incentives

Recognizing the importance of early funding to AS5 preparation and the greater risk attached to earlier ("seed") contributions, we have established an incentive system for contributions prior to February 2027. The early buy-in comes in two flavors:

Cash Incentive

1. **Highest Incentives (act before Aug 15, 2026): Cash Contributions made before August 15, 2026:** *Every* $1 of seed money contributed gets $0.60 of bonus credit (i.e., the individual buy-in rate drops from $250,000 to $156,250 and the full institutional buy-in reduces from $1.25 million to $781,250, if paid in lump sum or in full prior to August 15, 2026).
2. **Mid-tier Incentives (act before February 15, 2027): Cash Contributions made between August 15, 2026 and February 15, 2027:** *Every* $1 of seed money contributed during this period gets $0.30 bonus credit (i.e. the individual buy-in rate drops from $250,000 to $192,307 and the full institutional buy-in reduces from $1.25 million to $961,538, if paid in lump sum or in full prior to February 15, 2027).

Dual SDSS-V/AS5 Membership Incentive

1. **Joint SDSS-V / AS5 Incentives:** To enable more scientific activity (workshops, travel for students, scholarships) within SDSS-V, and to encourage new institutions interested in AS5 to join the SDSS science collaboration now, we are announcing the following

incentive system for institutions newly joining (or increasing their membership in) SDSS-V and AS5 together. *Institutions that simultaneously sign MOUs joining SDSS-V and AS5 together are eligible for a discount on SDSS-V, joining SDSS-V at a cost of $90k per slot or $450k for a full institutional membership (compared to the full cost of $230k per slot or $1.15M for full institutional membership).* The schedule of payments will be such that the SDSS-V membership portion will be contributed by October 2026 and the AS5 membership portion on the AS5 payment timescale.

Note: An Institution and/or Participant may only take advantage of either the Cash Incentives *or* the Dual SDSS-V Membership Incentive but may not do both.

Seed funding contributions (in either form of incentive) cannot be returned to the institution except under condition that AS5 is cancelled before the start of operations. In that case, the remaining balance of the seed funding cash will be returned on a prorated basis, in proportion to the amount of cash contributed, after the final AS5 expenses are paid. This return excludes any bonus credit or in-kind contributions.

It is ARC policy that all work packages negotiated for support of the SDSS projects (e.g., in which ARC provides funds for hardware or software development or operations support at one of the Member Institutions) require a waiver of overhead rates, currently written with the sole exception of operations at Apache Point Observatory. This policy has been a critical factor in obtaining support for SDSS from funding agencies, foundations, and institutions. The AS5 project will continue to operate under this policy for the time being.

Governance in AS5

Full Institutional Members and Associate Institutional Members with at least three Participants, or Participation Groups with at least three Participants, each have equal representation and voting rights on the AC and the CoCo (i.e., one vote per entity). Official project acknowledgements will contain a list of Full Institutional Members and a list of Associate Institutional Members (with three or more Slots). Participation Groups may request to be listed as a Participation Group, in lieu of listing each individual institution.

Appendix : Summary of Membership Costs for Different Scenarios

Regular Membership					
Option	**Total Contribution**	**Participants**	**Data Rights**	**Governance Rights**	**Comments**
Full Institutional Membership	$1,250,000	Unlimited Participants, unlimited faculty, postdocs, students	Full proprietary access	Yes (AC+Coco)	
Associate Membership (1 slot)	$250,000 per slot	Named Participants, 1 PI + 1 postdoc + sponsored students under direct supervision per slot	Proprietary access for named slot holders	≥3 Slots required for vote/representation	
Participation Group	≥ $750,000 (≥3 slots across institutions)	Named Participants as in Associate Membership across multiple institutions	Proprietary access for named slot holders	1 shared vote for every 3 slots	
Joint SDSS-V / AS5 Membership					
Full Institutional Membership for SDSS-V+AS5	$1,700,000				Total Savings: $700,000
Associate Membership (1 slot)	$340,000 per slot				Total Savings: $140,000
Seed Funding Incentives					
Cash Contributions made before August 15, 2026					
Option	**Total Contribution**		**Conditions**		**Total Savings**

Full Institutional Membership	$781,250		paid in full prior to August 15, 2026		$468,750
Associate Membership (1 slot)	$156,250		paid in full prior to August 15, 2026		$93,750
Cash Contributions made before February 15, 2027					
Full Institutional Membership	$961,538		paid in full prior to February 15, 2027		$288,462
Associate Membership (1 slot)	$192,307		paid in full prior to February 15, 2027		$57,693