

RadioAstron Monthly Notices
October 2005

I. Tasks and developments completed in the ASC in the period April-October 2005.

1. The Second Addendum to the Conceptual Design of RadioAstron Scientific Complex (ACD-2) was composed, agreed and issued. The document consisting of 135 pages describes all modifications, reformatations and innovations introduced to the Scientific Complex. The document was presented at the Meeting of General Constructors in Lavochkin Association and it was also subjected to formal evaluation by the Central Research Institute of Machine Science.
 2. SRT Engineering Model was disassembled in LA, and some devices of the scientific equipment were subjected to tests in ASC laboratory in order to examine the reason of high system temperatures measured in Pushchino. Intrinsic losses in the feed system and receiver noise temperature were measured in all three frequency ranges. The design of the feed system was modified. New 6-cm and receiver is being designed. Engineering model of 1.35-cm receiver was manufactured.
 3. The requirements on possible interferences from electro static discharges were formulated.
 4. Necessary corrections to the technical documentations were done in accordance with the ACD-2.
 5. Flight models of some devices were delivered to the ASC. They will undergo acceptance tests.
 6. Compatibility tests of the Engineering Model of the Formatter with the SRT scientific equipment were successfully conducted in May 2005.
 7. Service Bus of the spacecraft is being assembled in LA to be subjected to vibration tests.
 8. The first dummy scientific program was simulated for the period of 4 months (from February 1 till May 31 2008) in order to understand potentials of science operations under all functional constraints for high apogee RadioAstron orbit.
 9. A proposal to EVN for VLBI observations of OH maser flare in W75N was submitted and has been granted observing time.
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Appendix
(The list of used acronyms)

ASC	Astro Space Center of Lebedev Physical Institute
Cold Plate	cooled LNAs and antenna feed
DC	hermetic device container (part of payload); it contains Formatter, Rb oscillators, synthesizer, control unit and is placed under dish
DM	Device Module = DC + H-maser
EGSE	Electronic Ground Support Equipment
Electronic Complex	– all SRT electronics
EM	Engineering Model
FC	Focal Container – hermetic package with the scientific payload; it contains receivers, microwave synthesizer, control unit and is placed in focal site of dish
FM	Focal Module = Focal Container+Cold Plate

LA	Lavochkin Association
OHCFS-SRT	Space Radio Telescope On-board Heterodyne and Clock Frequency Synthesizer set
OHFS-SRT	Space Radio Telescope On-board Hydrogen Frequency Standard
ORFS-SRT	Space Radio Telescope On-board Rubidium Frequency Standard
RSA	Russian Space Agency
Service Module,	Spacecraft bus – spacecraft itself (without payload).
SRT	Space Radio Telescope (all scientific payload including 10-m dish)
TMS	Spacecraft Telemetry System (technical)
TVT	Thermo-Vacuum Tests
VIRK	Scientific high rate (up to 2x72 Mbit/s) radio complex, including transponder
ZBIT	Zero Baseline Interferometer Tests (ZBIT)