

cosmogram-17 / 1986Mar31 / J. Oberg  
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MIR: AN ADMIRABLE MIRACLE or MIRAGE?  
First, sincere congratulations to Piet Smolders for reporting last year that the new six-module station would be called "Mir", and for publishing an excellent schematic of it which was nearly perfect (he had the peripheral ports at the large end, not the small end). His seeing was the clearest of all -- even the Pentagon paid compliments by stealing his drawing for the 1985 "Soviet Military Power" report.

WHERE ARE THE MODULES? As of this writing, MIR orbits ahead of Salyut-7 at a slightly higher (and slower by eight seconds per rev) average orbit. Mar26 MIR was 338-358 km, 91.43 minutes, Salyut-7 was 340-345 km, 91.32 minutes, and MIR was 37 minutes ahead on Mar27. It is losing ground by 1.75 minutes per day. The two stations may be only a few miles apart about the middle of April. Before maneuver on Mar25 with P-25 engine, MIR was pulling ahead of Salyut in an orbit 332-339 km, 91.18 minutes.

LATEST: Mar30, Progress unloading completed; Mar31, crew begins observations of Kazakhstan. But such work can't keep them busy, there is very little instrumentation on the MIR. They may not stay long now!

BIG PUZZLE: Will the current crew fly over to Salyut-7? There's a good chance that references to "Salyut is ready to receive a new crew" refer to a "used crew" and not a freshly-launched team. Radio Moscow Mar-13/2000UT to GB/Ire, "...Meanwhile, its veteran predecessor the Salyut-7 continues orbiting the Earth ready to receive cosmonauts. Crews will be able to fly from one station to another." Moscow domestic service in Russian, Mar15/1600UT, had interview with Dzhanibekov who said about Salyut-7: "We hope it will still serve us for some time, and we are not yet writing off the Salyut-7 station. It is still quite capable of working, and evidently in the very near future we will do some work there, too". On: "So the result will be a kind of 'commuting' between the two stations, from MIR to Salyut and from Salyut to MIR?" Dzhan: "Indeed, it is expected that when some initial work has been completed on the MIR station, that the Mayaks will fly across to the Salyut-7 station." [Recall Dzhan last Sep performed extraordinary Soyuz T-

13 re-rendezvous with Salyut-7 in extra day of maneuvers following his departure, before returning to Earth. This demonstrated station-to-station intra-orbital transfer.] Aviation Week had reported that their man in Moscow had learned that a "new crew" would be sent to Salyut-7 to retrieve the French comet dust collector. We have also speculated the Salyut-7 visit could load Kosmos-1686 with goodies such as the two new space-suits, tool kits, four year's supply of amusement tapes/books, other consumables, cameras, etc., for transfer to MIR when K-1686 undocks from Salyut-7 and moves over to MIR. Anyhow, it now looks more likely that K&S will be the next crew aboard Salyut-7, probably after an operational crew relieves them aboard MIR. Three cosmonauts could be launched aboard Soyuz T-16 (or Soyuz M-1? See below:) at any day now. Maybe K&S have some EVA to do on MIR as well, such as attaching some add-on power panels? NEW-MODEL SOYUZ to appear: Dzhanibekov on Moscow TV (Mar15/1600UT in Russian) said: "The Soyuz T-15 spaceship, it seems to me, is a kind of concluding stage in this series of 'Soyuz' craft. We are already going over to a new modification... The ships of the future will have somewhat expanded possibilities, both as far as ensuring approach sequences and descents is concerned. They will give crews a great deal of help in solving different navigational tasks." Moscow Radio interview by Pelekhov with Savinykh, Mar15/1339UT, has Pelekhov say: "Incidentally, this craft is the last in the series that was designed for operation with stations of the previous generations, the Salyut stations."

CREW PRE-FLIGHT ANNOUNCEMENT: prior to launch, TASS said Kizim, Solovyov, and Aleksandrov were completing training. The day before launch, the actual crew was announced as K&S. On Mar15 a Moscow TV special identified Aleksandrov as Solovyov's backup. A good guess for backup mission commander would be Lyakhov.

MIR miscellany: MIR's solar panels (only 2?) have a total area of 76 square meters (KZ, Feb 21, page 1). All docking with the front end is at the front port only (NO side dockings); after modules dock, a manipulator will reposition them at peripheral ports (designated top, bottom, right, left). C17 1986 MAR 31

PRECISE LAUNCH TIMES. MIR was at 00:28:23 MT Feb20: Soyuz T-15 was at 12:33:07. I have not seen launchings given to the second often before. On the other hand, the Soviets did NOT announce any initial orbital parameters for MIR, nor did they refer to striking fact that MIR had been launched to allow drift into coplanar orbit with Salyut-7. Nor do we have any good explanations for the need for a two-day Soyuz T-15 rendezvous (NBECL of MIR was 334.87W, much farther east than normal for one-day rendezvous windows). Kubasov (TASS in English, Mar15/1842UT) said: "The two-day interval... had been decided upon better to test the systems of the spaceship that were involved in the docking. Less fuel, too, is spent in this way." Well, maybe that's all. Docking was at Mar15/1338UT (MET 49:05) on the transfer module side (the "six-ball").

RADIO MOSCOW also presaged "supply ship" launch. Progress-25 at Mar-19/1008UT (NBECL 331.10W), docking at Mar21/1116.

TASS Mar07: "The second Soviet-French manned space mission has been slated for 1988 aboard a Soviet space craft and a Soviet orbital station. A protocol to this effect was signed by delegations from the USSR and France at the presidium of the USSR Academy of Sciences today." Vive les spatio-nautes!!

"ASTRONOMER" module next? It could be the housing for the Salyut-HEXE X-ray telescopes, also for an instrument called "BST" for "bolshoy teleskop" [big telescope]; on Salyut-4, BST was "bortovoy solnechniy teleskop" [on-board solar telescope], wasn't it?

CHRISTIAN SCIENCE MONITOR March07 p5 carried article by me on MIR meaning. U.S. NEWS & WORLD REPORT Feb24 p16 had this obscure short item: "The U.S. isn't the only one with troubles in its space program. Soviet scientists had hoped to launch their own version of a re-usable shuttle during the Communist Party Congress in late February. But the project ran into problems and is being delayed." I have not found USN&WR to be particularly insightful or accurate re cosmonautics. Any other opinions?

PENTAGON'S booklet "SOVIET MILITARY POWER 1986" (released last week) had little on cosmonautics but some of it was quite interesting. In preface, "Both of the USSR's new generation of space-launched [SIC!] vehicles are

moving forward with successful test flights of the new medium-lift booster that will carry the manned space plane into orbit. Concurrently, testing is underway for the heavy-lift booster designed to send aloft the USSR's space shuttle as well as space station payloads in excess of 100 tons." Page 49 has a launch vehicle chart with "SL-X-16 medium-lift launch vehicle" ("in final stages of development" - "ifsod") for "reusable space plane in development", and SL-W shuttle and SL-W heavy lift launch vehicle, also "ifsod". No "SL-15" is shown; CPVick believes it is the new Proton with upper stages. Page 51, "The Soviets have made progress in their space plane and space shuttle programs, with the first flight of a Soviet shuttle expected in late 1986 or 1987." Page 52, "Launch pad compatibility testing has continued on the heavy-lift vehicle, a Saturn V-Class booster, and the Soviets have flight-tested the Titan III-Class medium-lift system." At the Pentagon press conference, spokesmen added that the SL-X-16 had made four sub-orbital flights, all successful; he also admitted there was no new evidence for the full-scale space plane but did mention the "five or so" launchings (four orbital launchings are on public record). The SL-X-16 is to be fielded by the end of this year and man-rated by this time next year, he said. Well, we've grown gray waiting for this bird. And we've scratched our heads bald trying to imagine the applications such boosters will be put to, since MIR has been announced as good for the next five years. More patience is called for. KOSMONAVTIKA encyclopedia: I got my copy and will include a detailed review in next cosmogram. Generally it was a disappointment, puffed up with fluff and stuff and nonsense, but there were some gems (like cosmonaut retirement dates, some obviously wrong!) and mysteries (a list of Soyuz tests under Kosmos label did not include 670!), so it was worth wading through. Note new study, "AUTOMATED RENDEZVOUS TECHNIQUES -- SOYUZ OPERATIONS", MS thesis in Physical Sciences at the U of Houston (Clear Lake) School of Sciences and Technologies, by Gennaro J. Avvento. I will review next issue. THANKS for expressions of sorrow over the Challenger catastrophe.

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"Rocky"