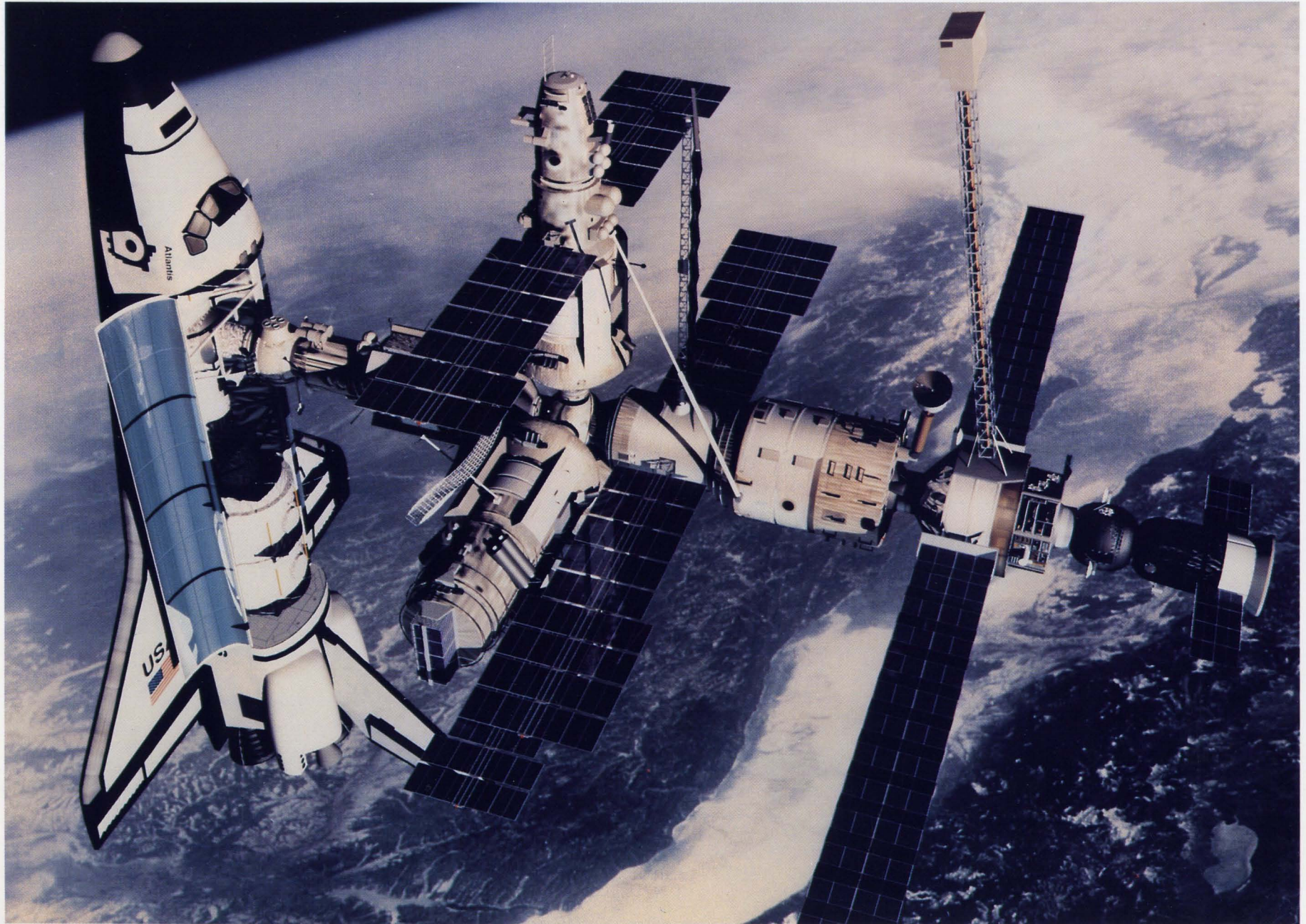




National Aeronautics and  
Space Administration

## Shuttle Docking with Russian *Mir* Space Station



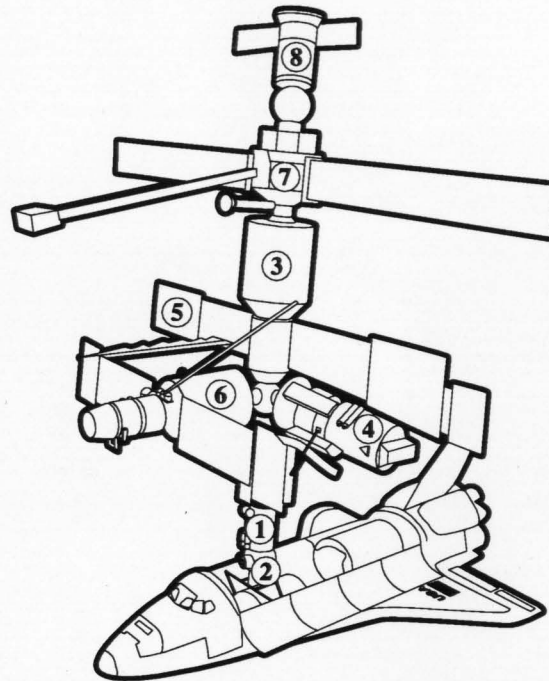


## Shuttle Docking with Russian *Mir* Space Station

This configuration is a technical rendition of the Space Shuttle *Atlantis* docked to the (1) **Kristall module** of the Russian *Mir* Space Station. The STS-71/*Mir* Expedition 18 is a joint U.S. Russian mission scheduled for June 1995. The Space Shuttle/*Mir* combination is a part of the International Space Station, and will be the largest space platform ever assembled. The platform is shown overflying the Lake Baikal region of Russia.

The Space Shuttle *Atlantis* appears in a new configuration for the STS-71 flight. The Russian developed (2) **Adrogynous Peripheral Docking System (APDS)** is used to link the Orbiter to the Kristall module. The APDS is mounted atop a U.S. developed external airlock which connects to a modified tunnel section leading to Spacelab module in the far aft of the payload bay.

*Mir* is shown in its 6 module configuration. The Kristall module has rotated to the forward docking port of the (3) **Mir Base Block** to facilitate the docking of the Space Shuttle. The (4) **Priroda module** is shown extending over port wing of the Orbiter with its (5) **solar panel** in the retracted position required by the dynamics of Orbiter/*Mir* docking. The (6) **Kvant 2 airlock module** appears parallel to the Orbiter crew module, while the **Spektr module** (Not shown) is at the nadir and is hidden from view by the port solar panel of the *Mir* Base Block. The (7) **Kvant module** is shown at the aft of the *Mir* Base Block with solar panels of the Kristall module installed and fully extended. The (8) **Soyuz TM transport vehicle** used for the launch and docking of the *Mir* Expedition 18 crew is docked to Kvant.



### Facts & Figures

*Mir's* core module was launched in 1986. Three modules were added later: the Kvant (astrophysics), Kvant 2 (logistics) and Kristall (materials processing).

Unmanned resupply vehicles called *Progress* haul food, propellant and supplies to *Mir*. The *Progress* vehicles rendezvous and dock with *Mir* automatically with no crew involvement required.

Russia holds the endurance record for humans in space. One, two-person crew spent 365 days

aboard *Mir*. A physician Cosmonaut who is currently aboard *Mir* will set a new record with 14 months in space.

Including STS-71, Space Shuttles will dock with the *Mir* space station seven to ten times from 1995 to 1997. U.S. astronauts will spend a total of two years on *Mir* in blocks of 90 days at a time.

### Significant Dates

Date	Schedule	Payload
2/94	STS-60	Sergei Krikalev becomes 1st cosmonaut to fly on the Space Shuttle
2/95	STS-63	Vladimir Titov becomes 2nd cosmonaut to fly on the Space Shuttle
3/95	<i>Mir</i> 18	Norm Thagard becomes 1st U.S. astronaut to fly on Soyuz and to work aboard Russian <i>Mir</i> space station for 90 days
6/95	STS-71	Shuttle <i>Atlantis</i> docks with <i>Mir</i> space station. Thagard returns to Earth with two cosmonauts
10/95	STS-74	Second Shuttle docking mission to <i>Mir</i> space station