

Europe's space freighter ready for launch

Following the successful launch of its Columbus laboratory, Europe's space agency is preparing its largest, most complex spacecraft to date. The *Jules Verne Automated Transfer Vehicle* (ATV) is the first in a series of unmanned craft designed to resupply the International Space Station

SPACECRAFT COMPONENTS

Propulsion module

Four main rocket engines

Attitude control thrusters

Water and fuel tanks

Solar array

Micrometeoroid and orbital debris protection system

Optical sensors

Enable automated docking with space station

Payload racks

Pressurised cargo module

Station crew gain access after docking

Docking and refuelling system

Maximum payload 9,000kg

Dry cargo 1,500-5,500kg

Refuelling propellant 860kg

Drinking water 840kg

Air (oxygen/nitrogen) 100kg

Once docked, ATV thrusters will boost station orbit to counter effects of atmospheric drag

ATV

Fiery end: After six months, ATV and 6.3 tonnes of station waste will burn up in controlled re-entry over Pacific Ocean

Picture: ESA

