SPACEFLIGHT

Satellite contract

value increased

A

$28 million contrac t
awarded to MPR Teltech of
Canada to design, build and test
a ground-based secure satellite
communications prototype for
the Department of National De-
fense (DND) has been increased
in value to $33 million.
The prototype system, called
Fassett, will operate in the ex-
treme high frequency (EHF)
band, and will be installed at the.
Defense Research establishment,
Ottawa, to be used by DND
scientists and engineers for test-
ing and evaluating the commu-
nications performance. Team
members are Raytheon Canada
and COM DEV. •

Argentina plans
new satellites

A

rgentina is planning to de-
velop a $300 million domes-
tic communications satellite
system called Nahuel, compris-
ing two satellites and ground-
control equipment.
The C- and Ku-band spacecraft
will also provide services to
Chile, Brazil, Uruguay and Para-
guay. The satellites are planned
to be launched in 1994.
• Up to seven new satellites are
to be ordered by Intelsat in
September 1992. Bids from po-
tential suppliers have been in-
vited and the deadline is 14
February. Launches could begin
in 1995. •

Galileo's antenna is still stuck
T

he high-gain antenna on the
$1.4 billion NASA Galileo
spacecraft remained stuck on 16
December after the fourth at-
tempt to unfurl the umbrella-
like structure fully by "shaking"
during an extended "cold soak"
at a distance of 480 million
kilokmetres from Earth.

It appears that three of the 18
ribs of the 4.87m-diameter an-
tenna are jammed in the closed
position, preventing the full de-
ployment of the vital high-data-
rate instrument.

The spacecraft was com-
manded to point its antenna
away from the Sun for 50h,
reducing temperatures to -274°,
which it was hoped would con-
tract the 1.98m-tall central mast
of the antenna, freeing the
jammed ribs.
Scientists at the NASA Jet
Propulsion Laboratory in Cali-
fornia believe that, as Galileo
was driven to and from the
Kennedy Space Center during
flight delays after the Challenger
accident, dry lubricant coating

STS42 TO CARRY A SPACELAB LABORATORY
STS42, the first of a possible nine Space Shuttle missions in 1992, is to carry a pressurised Spacelab laboratory and a crew of seven to conduct the week-long International Microgravity Laboratory (IML) mission. IML, seen here in the operations and checkout building, will investigate the effects of microgravity on material-science and life-science processes. STS42 is due for launch from Pad 39A at the Kennedy Space Center on 22 January. Roll-out to the pad from the Vehicle Assembly Building was scheduled for 18 December.

Progress M solar sail test planned
A

Progress M tanker craft de-
parting from Mir after leav-
ing supplies, will deploy a solar
sail, 25m in diameter, which will
be used to propel the spacecraft
during a demonstration test for
the Regatta programme.
During the trial, planned for
October 1992, Progress will ma-
noeuvre several kilometres from
Mir, using solar energy interact-
ing with the sail before conduct-
ing its usual re-entry.
A Regatta satellite with a full
scale, 200m-diameter solar sail is
scheduled to be launched in

1993-4, followed by three other
projected missions.
On board Mir, meanwhile,
cosmonauts Alexander Volkov
and Sergei Krikalyev continue a
regime of experiments. They are
due to return to Earth on 25
March, 1992, with German re-
searcher Klaus Dietrich Flade.
They were launched on 17
March aboard Soyu3, with TM14
Alexander Viktorenko and Alex-
ander Kaleri who will remain on
board Mir.

TM15, scheduled for June or
July 1992, will carry Frenchman

Michel Tognini for a commercial
12-day flight, with commander
Anatoli Solovyov and flight engi-
neer Sergei Avdeyev. Gennai Ma-
nakov and Alexander Po-
lishchuk are training for TM16.
• Japanese electronics manufac-
turer Fujitau will fly a protein-
crystallisation experimen t
aboard Mir during a'two-month
commercial mission, organised
by US company Payload Sys-
tems. The experiment will be
flown to Mir aboard a Progress
M on 21 January and return to
Earth in March. •

on the closed antenna was
eroded. This is the only one of
17 failure possibilities from
which the spacecraft could re-
cover, says NASA.
Without the high-gain an-
tenna, scientific data during the
planned 1995 exploration of the

planet Jupiter by a descent capsule and the main spacecraft in

orbit will be lost.

Relying on only two low-gain
antennas, NASA's planned re-
ceipt of 50,000 images from
Jupiter could be reduced to as
little as a few hundred. The
ability of the low-gain antennas
was demonstrated by the suc-
cessful return of images of the
asteroid Gaspra.
Although Galileo will be mov-
ing back towards the Sun during
1992, before its final gravity
assist manoeuvre using an Earth
fly by in December, further
"cold soaks" are planned and
NASA has not lost hope that the
mission can be saved.
• NASA's Hubble Space Tele-
scope was restored to normal
operational duty following a 24h
stand-dow n after compute r
problems caused an incorrect
command to be sent. •

EUVE is delayed
for six months

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he launch of NASA's Ex-
treme Ultraviolet Explorer
(EUVE) will be delayed until
May 1992, following a decision
by the US Air Force to refurbish
a badly corroded Delta 2 launch
pad at Cape Canaveral.
EUVE's launch had been
planned for December before the
refurbishment work was sched-
uled to begin, but was delayed to
late January, then March by
minor technical problems.
Another NASA spacecraft, the

Upper Atmosphere Research Satellite meanwhile, has discovered
violent, continent-sized wind-
storms between 48km and 96km
altitude.
Wind waves, spiralling up-
wards through the stratosphere
hit the thin air in the meso-
sphere, like a wave hits a beach
in turbulent 320km. D

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