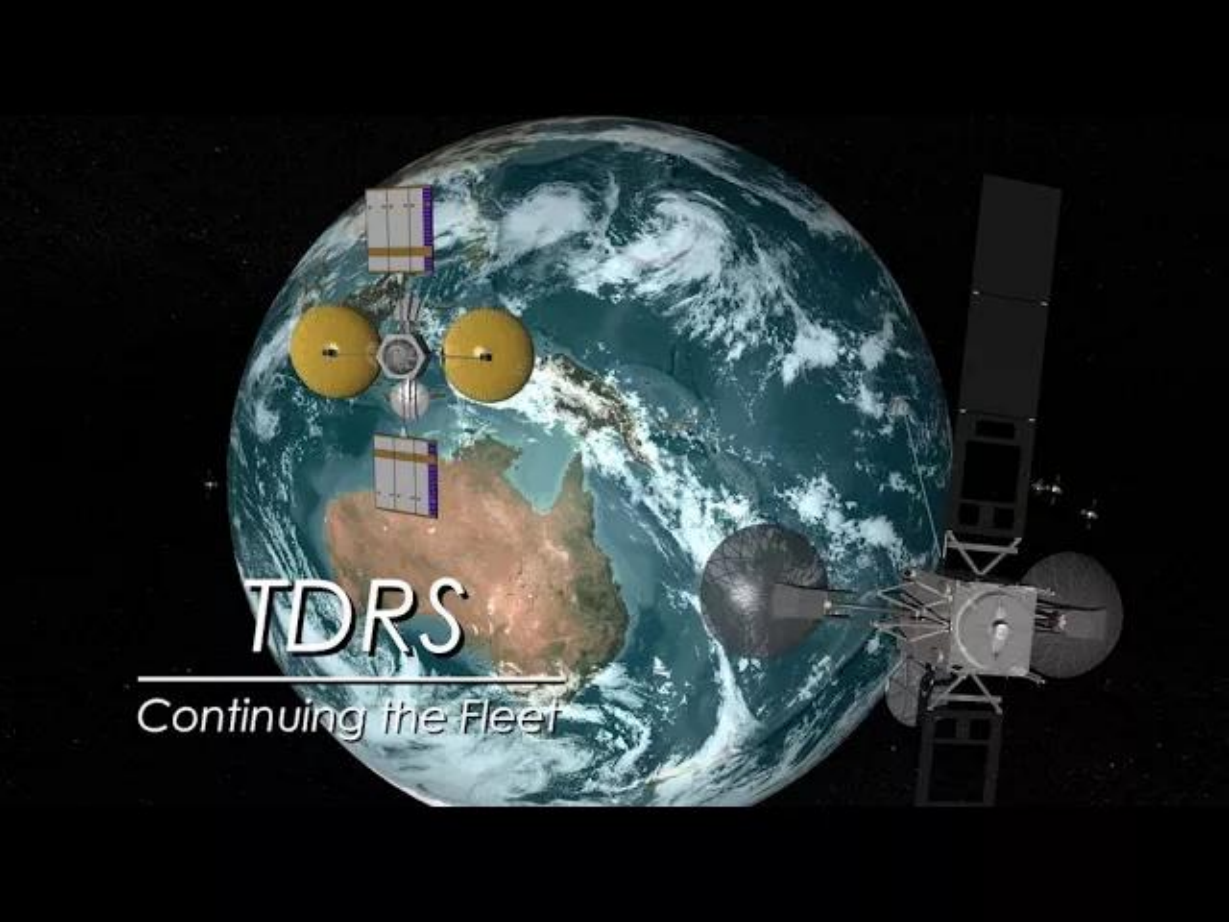
TDRS
Continuing the Fleet

1
00:00:00,000 --> 00:00:06,740
Music

2
00:00:06,740 --> 00:00:11,930
Thirty years ago, NASA launched into a
new era of high bandwidth, continuous

3
00:00:11,930 --> 00:00:17,920
space communication with the tracking
and data relay satellite, TDRS.

4
00:00:22,750 --> 00:00:27,250
Today, NASA's continuing this legacy by
launching the next generation of

5
00:00:27,250 --> 00:00:33,940
satellites. At Cape Canaveral,
the TDRS spacecraft sits atop an

6
00:00:33,940 --> 00:00:41,650
Atlas V rocket, ready for launch.
(Three, two, one and liftoff of the Atlas V

7
00:00:41,650 --> 00:00:47,980
rocket carrying the next generation in
tracking and data relay satellites.)

8
00:00:47,980 --> 00:00:52,930
After a four-minute burn, the Atlas V main
engine separates from the Centaur engine

9
00:00:52,930 --> 00:00:58,420
and drops back to Earth. Shortly after
separation of the main engine, the

10
00:00:58,420 --> 00:01:02,830
protective shield that covers the
payload, called the fairing, separates to

11

00:01:02,830 --> 00:01:07,980
reveal the TDRS spacecraft.
After boosting the spacecraft to

12
00:01:07,980 --> 00:01:12,060
geosynchronous transfer orbit, the
TDRS spacecraft separates from the

13
00:01:12,060 --> 00:01:17,940
Centaur engine. Shortly after the
separation, the two folded, single axis

14
00:01:17,940 --> 00:01:24,229
antennae reflectors are released to take
their natural parabolic shape.

15
00:01:24,229 --> 00:01:29,060
With a series of engine firings, the
TDRS on board rocket guides the

16
00:01:29,060 --> 00:01:34,610
spacecraft to its final location in
geosynchronous orbit. Once arriving at

17
00:01:34,610 --> 00:01:38,990
this orbit, the spacecraft starts its
deployment sequence by unfolding the

18
00:01:38,990 --> 00:01:44,780
first solar array. Next, the two single
access antennas are deployed and locked

19
00:01:44,780 --> 00:01:49,340
into position. These antennas are
designed to track and communicate with

20
00:01:49,340 --> 00:01:54,319
low Earth orbit satellites. After the
single access antennas are secured into

21

00:01:54,319 --> 00:01:58,900
place, the second solar array starts to unfold

22
00:01:58,900 --> 00:02:04,140
and the SGL and Omni antennas are deployed.

23
00:02:04,140 --> 00:02:09,390
Once TDRS completes this deployment sequence, it's now ready for testing and

24
00:02:09,390 --> 00:02:14,230
calibration before being placed into service.

25
00:02:14,230 --> 00:02:19,690
With this addition of TDRS-M, NASA has assured the future of continuous