
Solar Dynamics Observatory

1
00:00:12,499 --> 00:00:09,200
the concept of a star tracker probably

2
00:00:15,140 --> 00:00:12,509
can be traced back to the early sailors

3
00:00:17,450 --> 00:00:15,150
who used to navigate the open sea the

4
00:00:18,860 --> 00:00:17,460
concept is they use starfield patterns

5
00:00:21,740 --> 00:00:18,870
in order to tell them where their

6
00:00:23,420 --> 00:00:21,750
appointed while they're selling from

7
00:00:26,090 --> 00:00:23,430
east of west or north or south whichever

8
00:00:28,520 --> 00:00:26,100
direction are going the Star Trek is a

9
00:00:31,370 --> 00:00:28,530
lot more complicated and that it uses

10
00:00:34,610 --> 00:00:31,380
the entire star field pattern to to

11
00:00:37,340 --> 00:00:34,620
provide attitude knowledge or in the

12
00:00:39,350 --> 00:00:37,350
layman's term of more of the direction

13
00:00:41,960 --> 00:00:39,360

in which the spacecraft is pointing

14
00:00:44,840 --> 00:00:41,970
while is orbiting the earth or doing

15
00:00:46,760 --> 00:00:44,850
whatever its science mission requires it

16
00:00:48,650 --> 00:00:46,770
to do so essentially it's an optical

17
00:00:52,250 --> 00:00:48,660
device to access the eyes of the

18
00:00:54,139 --> 00:00:52,260
spacecraft the star tracker is built for

19
00:00:56,389 --> 00:00:54,149
the Lunar Reconnaissance Orbiter and the

20
00:00:59,270 --> 00:00:56,399
Solar Dynamics Observatory both NASA

21
00:01:01,910 --> 00:00:59,280
missions were built in Florence Italy by

22
00:01:03,650 --> 00:01:01,920
Galileo avionic they write their own

23
00:01:06,069 --> 00:01:03,660
software used to operate the star

24
00:01:08,629 --> 00:01:06,079
trackers around all of their optics

25
00:01:13,069 --> 00:01:08,639
fabricate the structures and assemble in

26
00:01:15,859 --> 00:01:13,079
testa electronics once the star trackers

27
00:01:17,749 --> 00:01:15,869
are assembled Galileo a Bionicle works

28
00:01:19,840 --> 00:01:17,759
with NASA engineers in order to ensure

29
00:01:22,940 --> 00:01:19,850
that the star trackers are built to

30
00:01:26,230 --> 00:01:22,950
achieve their performance requirement as

31
00:01:29,690 --> 00:01:26,240
well as their environmental requirements

32
00:01:32,449 --> 00:01:29,700
the LRO and stl missions both use two

33
00:01:34,910 --> 00:01:32,459
star trackers for redundancy so that if

34
00:01:38,469 --> 00:01:34,920
you get a failure in one the second star

35
00:01:41,269 --> 00:01:38,479
tracker will be used as the backup also

36
00:01:44,090 --> 00:01:41,279
the use of two star trackers provided at

37
00:01:46,309 --> 00:01:44,100
it or increase performance accuracy so

38
00:01:48,319 --> 00:01:46,319

that the spacecraft will have a more

39
00:01:51,679 --> 00:01:48,329
accurate knowledge of where it's pointed

40
00:01:55,930 --> 00:01:51,689
while its orbit either the moon

41
00:01:59,170 --> 00:01:55,940
the earth order something

42
00:02:01,720 --> 00:01:59,180
NASA is an educational extension of the

43
00:02:04,360 --> 00:02:01,730
government through all the information

44
00:02:07,180 --> 00:02:04,370
we get from all our various missions we

45
00:02:09,460 --> 00:02:07,190
learn things about our earth space how

46
00:02:11,590 --> 00:02:09,470
space affects earth are changing

47
00:02:13,690 --> 00:02:11,600
environment all of these things are

48
00:02:17,110 --> 00:02:13,700
important to everyone in the world

49
00:02:20,290 --> 00:02:17,120
whether we know it or not and the

50
00:02:22,180 --> 00:02:20,300
importance of star trackers is they act

51
00:02:24,490 --> 00:02:22,190
as the eyes of the satellite to let the