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00:00:01,580 --> 00:00:05,670
\h George Diller/IRIS Launch Commentator: Back now at the mission directorate center here at

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00:00:05,670 --> 00:00:10,150
\h Vandenberg Air Force Base, we're joined by Jim Hall.

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00:00:10,150 --> 00:00:18,840
\h Jim is the mission manager for the Launch Services Program for the IRIS spacecraft

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00:00:18,840 --> 00:00:24,270
\h and has been following it throughout the preparations to fly today for the

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00:00:24,270 --> 00:00:32,450
\h Pegasus XL associated with the integration of the spacecraft with the Pegasus.

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00:00:32,450 --> 00:00:39,060
\h Jim, welcome and would like, first of all to ask

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00:00:39,060 --> 00:00:45,850
\h you when did the Launch Services Program actual start becoming involved with IRIS on our radar scope

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00:00:45,850 --> 00:00:48,440
\h Jim Hall/NASA IRIS Mission Manager, Launch Services Program: George, it was really early on

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00:00:48,440 --> 00:00:57,560
\h back in June of 2009 when the (unintelligible) program awarded the contract.

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00:00:57,560 --> 00:01:01,460
\h Immediately a mission manager was assigned, myself and a small team.

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00:01:01,460 --> 00:01:09,030
\h The next July of 2009 we attended a kickoff meeting and started to

12
00:01:09,030 --> 00:01:11,820
\h understand some of the spacecraft requirements.

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00:01:11,820 --> 00:01:17,160

\h That activity continued on. We worked to understand those requirements

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00:01:17,160 --> 00:01:22,740
\h for a period of six months or so and then we got into our Launch Services task order process.

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00:01:22,740 --> 00:01:30,790
\h Which is where we go off and award missions on the NLS contract on a small class.

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00:01:30,790 --> 00:01:33,780
\h Diller: What is NLS?

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00:01:33,780 --> 00:01:43,110
\h Hall: NASA Launch Services contract. So we went off and did that competition in June of 2010.

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00:01:43,110 --> 00:01:52,200
\h One year later we awarded IRIS, the Orbital Sciences team won the award

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00:01:52,200 --> 00:01:58,080
\h on LSTO and then we got our bigger team together and from that point forward

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00:01:58,080 --> 00:02:02,850
\h we went off and worked very closely with the IRIS team and got to this point.

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00:02:02,850 --> 00:02:08,550
\h Diller: Well, looking at today how many personnel all together are directly involved

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00:02:08,550 --> 00:02:13,840
\h in our countdown and launch operations today and what segments are they in?

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00:02:13,840 --> 00:02:23,440
\h Hall: We've got over 120 NASA and contractor personnel supporting today.

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00:02:23,440 --> 00:02:31,620
\h And they are all highly-trained and working hard toward the moment we're at today.

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00:02:31,620 --> 00:02:37,500
\h As we look at the L-1011 flying in the air right now.

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00:02:37,500 --> 00:02:43,170
\h Diller: That includes our Air Force counterparts who have been working closely with us since we got her

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00:02:43,170 --> 00:02:46,100
\h Hall: They sure have. We've been working very closely and they've overcome some

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00:02:46,100 --> 00:02:52,170
\h problems while we've been here. So, it's been a really good team effort. We've had some small challeng

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00:02:52,170 --> 00:02:57,030
\h but nothing that we couldn't overcome now that we've gotten to this point.

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00:02:57,030 --> 00:03:01,540
\h Diller: We've got some really explanatory video of what all has happened

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00:03:01,540 --> 00:03:08,080
\h with the Pegasus and IRIS in preparation for the launch today so we'll roll the video and,

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00:03:08,080 --> 00:03:11,310
\h Jim, tell us what we're seeing.

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00:03:11,310 --> 00:03:15,040
\h Hall: Here is the IRIS spacecraft being processed in the

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00:03:15,040 --> 00:03:23,540
\h Lockheed Martin Sunnyvale plant out in California. This is solar array deployment.

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00:03:23,540 --> 00:03:30,080
\h As you can see, IRIS is a small spacecraft and the solar arrays are about 12-foot across.

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00:03:30,080 --> 00:03:35,010
\h And the weight of the IRIS spacecraft is about 400 pounds.

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00:03:35,010 --> 00:03:37,600
\h We took is in the truck and we trucked it on down to

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00:03:37,600 --> 00:03:42,370

\h Vandenberg Air Force Base and it arrived here at Building 1555.

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00:03:42,370 --> 00:03:47,680
\h That's where the Pegasus was processed in parallel to IRIS coming on down.

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00:03:47,680 --> 00:03:54,270
\h This is a view of the Pegasus first stage as we're panning across.

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00:03:54,270 --> 00:03:59,620
\h Looking at the top section here, this is the wing of the Pegasus.

42
00:03:59,620 --> 00:04:06,240
\h Heading towards the back we've got the wings and the nozzle.

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00:04:06,240 --> 00:04:09,860
\h Here's our team, some of the folks who spent a lot of time testing

44
00:04:09,860 --> 00:04:13,570
\h getting the Pegasus ready for the launch.

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00:04:13,570 --> 00:04:16,290
\h And there's a lot of the testing and integration.

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00:04:16,290 --> 00:04:18,380
\h As you can see, there's a lot of that test set up

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00:04:18,380 --> 00:04:21,470
\h hardware and the team members getting ready.

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00:04:21,470 --> 00:04:26,000
\h We ran repeated tests to be sure everything was working right.

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00:04:26,000 --> 00:04:31,310
\h Here's a great shot of the three stage Pegasus rocket, all three stages.

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00:04:31,310 --> 00:04:38,430
\h There's the business end of the Pegasus. And you can also see also,

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00:04:38,430 --> 00:04:44,270
\h the tail, the fins on the first stage and the attitude control.

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00:04:44,270 --> 00:04:47,450
\h In this shot we're mating the first and second stage.

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00:04:47,450 --> 00:04:51,720
\h And there's the Orbital technicians as they're mating those two stages.

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00:04:51,720 --> 00:04:57,760
\h This will be the 42nd launch of the Pegasus system.

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00:04:57,760 --> 00:05:02,500
\h And, we've had a lot of success with this. It's been a great rocket for us.

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00:05:02,500 --> 00:05:08,480
\h This is a nice shot of the enclosure -- the clean enclosure that we have.

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00:05:08,480 --> 00:05:13,390
\h When the spacecraft arrives, we mate that in the clean enclosure.

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00:05:13,390 --> 00:05:20,250
\h Speaking of the spacecraft, there it is. And, it just arrived, that was back on April 19th.

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00:05:20,250 --> 00:05:25,160
\h We're forklifting it out of the transportation truck there.

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00:05:25,160 --> 00:05:31,370
\h And looking ■ you'll notice it's got (unintelligible) around it ■ contamination sensitive payload here.

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00:05:31,370 --> 00:05:38,180
\h So we've got to make sure it's covered up. And this is the shipping fixture.

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00:05:38,180 --> 00:05:43,430
\h The team's gonna cleaning up around there and they're going to lift the

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00:05:43,430 --> 00:05:47,790

\h IRIS spacecraft off of that fixture, as they put the bracketry on there,

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00:05:47,790 --> 00:05:52,350
\h they're going to put it on to our ground handing fixture.

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00:05:52,350 --> 00:05:57,040
\h We call it the "bird-mobile" and they're getting ready to do that.

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00:05:57,040 --> 00:06:02,240
\h As soon as they get that on there, they're gonna start looking at "hey,

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00:06:02,240 --> 00:06:07,370
\h did we have any post-shipment problems with it. So they did a complete check out of it.

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00:06:07,370 --> 00:06:14,940
\h And there's some of the Lockheed Martin team there, just making sure their baby made it safely.

69
00:06:14,940 --> 00:06:18,160
\h That was well done. And, as you can see here,

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00:06:18,160 --> 00:06:24,000
\h the "bird mobile" going into the clean tank ■ we're shoring it all up there.

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00:06:24,000 --> 00:06:28,170
\h Then our spacecraft team unwrapped their present.

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00:06:28,170 --> 00:06:36,310
\h And, there she is, IRIS. You can see Pegasus' third stage in the background there.

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00:06:36,310 --> 00:06:42,090
\h The team's next job is to mate the IRIS spacecraft with the Pegasus launch vehicle.

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00:06:42,090 --> 00:06:46,550
\h And you can see the "bird mobile" being positioned there. We then tweak it a right and left,

75
00:06:46,550 --> 00:06:50,860
\h and right over the little (unintelligible) you can see there. We have an isolation system,

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00:06:50,860 --> 00:06:52,750
\h we have a shot of the isolation system,

77
00:06:52,750 --> 00:06:59,110
\h so we don't get any excessive vibration or shock on the payload.

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00:06:59,110 --> 00:07:03,720
\h Moving immediately into encapsulation, you notice the star bird faring

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00:07:03,720 --> 00:07:12,130
\h doors are being closed and now getting the port one closed and putting the finishing touches on that.

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00:07:12,130 --> 00:07:16,370
\h And at this point and time, it looks like a rocket.

81
00:07:16,370 --> 00:07:23,040
\h There she is. We hoisted her over on the assembly and integration trailer you see there,

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00:07:23,040 --> 00:07:27,310
\h and that■s for the preparation to roll out to the hot pad so

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00:07:27,310 --> 00:07:32,780
\h we can mate up to the Orbital L-1011 carrier aircraft.

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00:07:32,780 --> 00:07:37,940
\h Early in the morning, you want to avoid the wind in this operation so were driving along.

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00:07:37,940 --> 00:07:39,820
\h This is a couple of quick notes.

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00:07:39,820 --> 00:07:45,960
\h Pegasus weighs about 51,000 pounds and it's about 55-foot long.

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00:07:45,960 --> 00:07:50,920
\h Rolling it under the Stargazer, this is one of the only L-1011s

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00:07:50,920 --> 00:07:53,830

\h that's still flying in the United States right now.

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00:07:53,830 --> 00:07:59,920
\h We're getting ready to mate the Pegasus to up to the securing four hooks up there over the wing.

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00:07:59,920 --> 00:08:04,010
\h Interesting, we're jacked up two foot. We had to jack the

91
00:08:04,010 --> 00:08:10,180
\h L-1011 up two foot -- see this jack and this little yellow right there.

92
00:08:10,180 --> 00:08:18,010
\h Roll that baby under there; install it -- the LIT rolling back there. Hey baby, we're ready to fly.

93
00:08:18,010 --> 00:08:22,130
\h Diller: Well, Jim, we noticed in the video we saw,

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00:08:22,130 --> 00:08:29,140
\h there's a name penciled on the faring. Who is it and what's the significance of it?

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00:08:29,140 --> 00:08:34,480
\h Hall: That is George Hale. We talked with the principal investigator.

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00:08:34,480 --> 00:08:39,690
\h IRIS is a sun sensing experiment. We're doing a lot ■ we're gonna learn a lot about the sun.

97
00:08:39,690 --> 00:08:48,130
\h And the team wanted to recognize ■George Hale lived back in the late 1800s and early 1900s.

98
00:08:48,130 --> 00:08:53,170
\h He was an American solar astronomer and he was a graduate of

99
00:08:53,170 --> 00:08:58,500
\h MIT that was responsible for many solar discoveries.

100
00:08:58,500 --> 00:09:07,820
\h So, he also, interestingly, hired and encouraged Edwin Hubble at the Mount Wilson Observatory.

101
00:09:07,820 --> 00:09:16,570
\h So, he did all kinds of work. He did work on determining sun spots have a magnetic signature to them.

102
00:09:16,570 --> 00:09:20,840
\h And he played a central role in developing the

103
00:09:20,840 --> 00:09:29,540
\h California Institute of Technology to one of the leading research centers, research Universities. So ■

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00:09:29,540 --> 00:09:35,280
\h Diller: Jim, thank you very much for talking to us about what we've done to get to this point today.

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00:09:35,280 --> 00:09:42,850
\h The Pegasus and IRIS spacecraft together now flying along with this L-1011 ready for launch.

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00:09:42,850 --> 00:09:44,530
\h Hall: My pleasure. Diller: Jim, best of luck tonight.

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00:09:44,530 --> 00:09:49,150
\h Hall: We're all excited. Go, Go Pegasus. Go IRIS.