Researchers will soon send a seven-foot-tall observatory on a mission to discover some of the secrets behind the largest body in the solar system the Sun. Scientists placed a renewed emphasis on the Sun in recent years since it plays such a large role in everything from determining our planet's climate to knocking out orbiting satellites and even taking down power grids on earth after launching into Earth orbit aboard a winged Pegasus rocket NASA's iris spacecraft short for interface region imaging spectrograph will stare at the...
Sun with a steady I concentrator on the region between the sun's surface and it's blazing atmosphere or Corona the region is called the chromosphere and it's here that temperatures rise from 6,000 degrees Fahrenheit on the surface to millions of degrees in the glowing corona researchers don't know why that change occurs but are betting iris will tell them i think that the uniqueness of this mission and why it's important is that the mission is looking at the Sun not only son we know a lot about the surfaces some massive temperature
changes occur in this region why I'm we
don't understand this unique region of
the atmosphere the Sun iris will show
the solar chromosphere in more detail
than has ever been observed my opinion
is that we're bound to see something we
didn't expect to see the Sun often is
thought of as little more than a giant
nuclear furnace that sits at the center
of the solar system and warms our planet
but its effects on earth are profound
which heap driving weather patterns and
CMEs commonly known as solar flare
emitting blasts of radiation into space
that threatens satellites and
communications networks the Sun affects
our weather the Sun affects us in a lot
of different ways
the iris spacecraft will study the Sun
in conjunction with other solar sensing
spacecraft including NASA's Solar Dynamics Observatory or sdo the main
difference between the iris mission is
that it looks at a tiny portion of the Sun at a time not the whole disk that it
almost acts like a microscope for SDOs
overall telescope so it's going to look in closely and it's going to be looking at that specific region to see how the
changes in matter and energy curve in this region scientists designed the instrument to return specific data but they also expect some unexpected results from time to time two big surprises will come when we start to see the data because we know to some extent what we hope to learn what types of observations will answer those questions but there's always that element of surprise a Pegasus rocket built by Orbital Sciences has been employed to lift the observatory into Earth orbit Pegasus which with its wing and tail sections
looks a lot like an airplane is the only

launcher of NASA mission that drops from

a converted airliner before igniting its

first stage engine designed as an

inexpensive alternative to launch small

missions Pegasus Rockets have recorded

dozens of successful launches the

Pegasus launch system is unusual and

unique in that you have a mobile launch

pad Pegasus is dropped from the belly of

an l-1011 aircraft at 40,000 feet that's

traveling down range at over 500 miles

per hour Pegasus launch system has the

theoretical capability of launching from
any point on the surface of the earth

Pegasus missions have begun from Cape Canaveral Florida Wallops Flight Facility in Virginia Vandenberg Air Force Base in California and Quantrill and atoll in the Pacific Ocean because the Iris spacecraft will fly a path that takes it roughly over each reverse poles on each orbit the mission will launch from Vandenberg the L-1011 will take off from Vandenberg and release the rocket off the California coast heading south what I'll remember most about the Iris launch is
what I remember from all my missions and

00:04:27,000 --> 00:04:32,430
that's the people i'm blessed with a

00:04:29,370 --> 00:04:34,918
terrific launch team the NASA team

00:04:32,430 --> 00:04:38,069
members as well as orbital sciences

00:04:34,918 --> 00:04:39,948
corporation and Lockheed Martin for both

00:04:38,069 --> 00:04:42,870
the launch vehicle and spacecraft all

00:04:39,949 --> 00:04:45,478
terrifically talented and eager and

00:04:42,870 --> 00:04:47,490
excited to go launch iris biggest

00:04:45,478 --> 00:04:49,228
surprise will come once the mission is

00:04:47,490 --> 00:04:55,069
launched and it starts to observe the

00:04:49,228 --> 00:04:57,478
Sun you know we always try to map out

00:04:55,069 --> 00:04:59,490
what sort of events were going to be

00:04:57,478 --> 00:05:01,409
targeting what sort of observations we

00:05:04:59,490 --> 00:05:03,990
will be making of those events to

00:05:01,410 --> 00:05:06,750
improve our understanding of the solar
atmosphere and space weather we're always looking for the answers of why the why this physics of our solar system at our planets work and everything starts at the root with the Sun