

Taking Great Pictures on the Road

Going on a car trip soon? Got your maps, GPS, or smartphone ready to show you the turns on the road? You probably feel confident now that you are prepared to travel and ready to take great vacation pictures!

But, what if your destinations keep moving around as well? Yep, what if the restaurant, city or national park moves while you are driving there? What would you do then?

Interestingly, this is the challenge that our unmanned satellite spacecraft encounter every day when they are on a picture-taking mission to our Moon, to the other planets and their moons, or to the asteroids. Those destination points are moving from 10,000 to 100,000 miles per hour in their own solar orbits. First, our spacecraft have to catch up to them. Then, to touch or land, they have to slow down to a snail's pace. All of this needs to happen with planning and precision – else they may crash!

Thank God for the hard work and intelligence of the space scientist teams of NASA. Our USA space program (funded by your tax dollars, thank you) has been successfully orchestrating these complicated maneuvers for decades.

When those spacecraft are on the road to a destination, there are no street signs, paved roads, or rest stops to guide them. "Road maps" are pre-calculated during years of work by scientists and mathematicians who utilized the laws of gravity, propulsion, and physics.

How do we know the current locations of the satellites? There are bright distant stars whose lights are picked-up by telescopes and guidance computers on the spacecraft and are used to determine the present location in space using a 3-D mathematical triangulation method. Amazing, isn't it?

Because the satellites are millions of miles away from us, it takes days to transmit all their pictures back to Earth. Today, you can freely

enjoy the results of their high definition photos and their analysis of the planets and moons.

In May, the USPS commemorated eight beautiful photos from satellites and telescopes in space with an outstanding special-issue stamp sheet. These works of art were issued as *Forever™* stamps which you can use as first class postage. The planets revealed some of their secrets to our cameras and special instruments.



"Views of Our Planets" – reduced size copy from USPS web site of stamps issued on May 31, 2016. This is the copyrighted property of the United States Postal Service® (Postal Service™). All rights reserved.

From the reverse side of this stamp sheet you can find out when and where the photos were taken and which satellite or space telescope took the picture. These images are so beautiful that I'm keeping a set for display at home and using the remainder for birthday/greeting cards to friends/family. What beauty God has created in the universe for us to explore!

You may be surprised to learn that some of our satellites also recorded the sounds of the planets and moons. You can listen to them at the internet YouTube link given below. Each planet and moon has a unique sound pattern – they are music to my ears. Awesome!

Maybe you are asking, "Why only eight planets?" An apprehensive friend exclaimed, "We learned in school that there were nine

planets. What happened to Pluto? I want my ninth planet back!”

Pluto had been considered the most distant planet from Earth. Then in 2006, vigilant astronomers determined that Pluto was only one of dozens of smaller sub-planets billions of miles from Earth. So, they knocked it off the official list of planets.

With great anticipation and curiosity, NASA courageously launched the New Horizons satellite ten years ago. It traveled over three billion miles to check out Pluto and other Kuiper belt objects at the outer limits of our solar system. Sure enough, they found that Pluto is small, but lovely. You can even discern an image of a loving heart on its surface.

So, the USPS issued another special-issue stamp sheet which features only Pluto and the space probe satellite that photographed it. Eventually, that New Horizons satellite is destined to go into interstellar space—beyond

our solar system and towards other stars you can see in the sky. Just like its predecessors (Voyager 1 and 2, and Pioneer 10 and 11) it will soon be on the “open road” travelling to the next solar star system. Who knows what wonders God has in store for us there?

Meanwhile, it’s just another peaceful day for our speeding spacecraft.



“Pluto-Explored” – reduced size copy from USPS web site of these stamps issued, May 31, 2016. Also shows an artist’s rendering of the New Horizons spacecraft which photographed Pluto. This is the copyrighted property of the United States Postal Service® (Postal Service™). All rights reserved.

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Interact and contact author: KenKozy@KenKozy.com [Free Downloads](#) at author’s web site.

→ **MUSIC LINKS** (at YouTube)

[Listen to actual sounds our satellites recorded](#) of planets and moons. [Hymn with Carrie Underwood](#)

[“The Planets” – an orchestral suite](#) by Gustav Holst

[“Jupiter”](#) by W.A. Mozart Symphony #41

→ **VIDEO TOUR LINKS**

[Voyager 1](#) and [Voyager 2](#) spacecraft, launched in 1977, entered [interstellar space](#) and are over 12 billion miles from Earth. They are headed to distant stars and are now time capsules carrying pictures and sounds from Earth. Notice their space maps. Other spacecraft entering interstellar space: [Pioneer 10](#), [Pioneer 11](#), and [New Horizons](#). Here is a [List of artificial objects leaving the Solar System](#).

→ **REFERENCE LINKS**

[NASA](#): National Aeronautics and Space Administration

Web site: www.nasa.gov [Twitter: NASA](#)

[USPS](#): United States Postal Service®

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Planets: [Mercury](#) [Venus](#) [Earth](#) [Mars](#) [Jupiter](#) [Saturn](#) [Uranus](#) [Neptune](#) [\[Pluto\]](#)

See [Description of the Asteroid Sample Return Mission](#) which also will transmit photos of an asteroid.

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