thank you I'm here with dr. Ellen stofan

NASA's chief scientist we're just

outside of the Vehicle Assembly Building

and just a few miles away is osiris-rex

on the launch pad ready to head to the

asteroid Bennu to collect a sample and

then return it back to earth dr. Stephan

why can we learn about studying

asteroids that could benefit benefit us

and learning about our solar system

asteroids are the primitive material

left over from when the planets formed

so the earth us this building everything

around us asteroids are the key to what
were those materials that everything that is around us was made now everything on the earth has been processed all this materials been processed and processed asteroids are the pristine material and we know they contain really interesting things like the water that is the water that originated our oceans and all the water here on earth and they actually also contain organic molecules that helped make us and so why did NASA pick the new as an asteroid to study and what are the benefits of a sample return mission you
know Ben who is what we call a 

carbonaceous asteroid now carbonaceous 

asteroids are the ones where we know 

they have a lot of water in them and 

again we think that water is the source 

of the water that's here on earth and we 

know they have organic molecules on them 

in fact some of the letters in our DNA 

that make up our DNA those those 

molecules have actually been found in 

carbonaceous meteorites so Ben who could 

hold keys not just to the origin of 

water on earth but to the origin of life 

on Earth so we're particularly
interested in that type of asteroid now

when you send a spacecraft to either a

planet or an asteroid you take along

instruments and you do the best job you can of characterizing the material but

you have to realize when we shrink and a scientific instrument to fit down onto a spacecraft it becomes a little less capable if we can actually bring those rocks back here to earth we can analyze them with instruments that fill a room basically we get much more precise and better information so scientists especially geologists like me we like to get those rocks back here on earth where
we can do really amazing science with them that we just can't do remotely and now NASA is plenty to do an asteroid redirect mission and then eventually a journey to Mars how does this mission help that goal you know because small bodies are potentially really interesting in the future for resources they're really interesting for water and of course we're concerned about them from a planetary hazard point of view asteroids have hit this planet in the past and they will hit us again at some point in
the future the asteroid redirect mission
tests technologies like solar electric propulsion that we're going to use to
cargo out two astronauts who will
someday be out at Mars we're also going
to be testing techniques that will help us understand how we might in the future potentially deflect a hazardous asteroid so it's helping us protect this planet and the asteroid redirect mission is going to help us to get us on our way to getting humans to Mars and Osiris Rex is really the first step it's teaching us how do we get to a small body how do we
maneuver around it how do we get a sample back it's the first step the asteroid redirect mission is the next step excellent well thank you for being with us today and back to you you