**Listening Exercise 176**

Astronomy

USA Spanish accent

Guidelines:

1. Review the questions.
2. Listen to the audio twice (click the icon). (If link does not work from email, save to computer and then open).
3. Answer the questions based on information in the audio passage. If unable to answer from the audio, refer to the transcript.
4. Consult the transcript, vocabulary, translation and answers to confirm correct responses and gauge understanding.



**Questions**

1. Which best describes the main theme?
   1. Position location
   2. Spacecraft resupply
   3. Rocket launch
   4. Scientific experiment
2. According to the speaker, which of the following is true about Neutron stars?
   1. Extremely dense and heavy
   2. Twice as big as the sun
   3. 20,000 kilometers in diameter
   4. Weigh 10 million tons
3. Which best characterizes what this article says is ‘unkown’ about neutron stars?
   1. Intensity
   2. Interior
   3. Size
   4. Weight
4. Scientists consider neutron stars as potentially:
   1. Beneficial
   2. Dangerous
   3. Problematic
   4. Unexplorable
5. What does a neutron star give off?
   1. Bright light
   2. Electromagnetic field
   3. Noticeable x-rays
   4. Solar wind
6. The most desireable characteristic of a neutron star is:
   1. Brightness
   2. Mystery
   3. Stability
   4. Uniqueness

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| El lanzamiento de la nave espacial de carga, Dragón, hacia la estación espacial internacional podría marcar un hito en la historia de la investigación espacial como el comienzo de un futuro sistema de navegación interestelar. Junto con suministros frescos, el Dragón lleva un telescopio especial llamado Neutron Star Interior Composition Explorer, o NICER, que mirará de cerca a las misteriosas estrellas. | The launch of the cargo spacecraft, Dragon, to the international space station could mark a milestone in the history of space research as the beginning of a future interstellar navigation system. Along with fresh supplies, the Dragon carries a special telescope called Neutron Star Interior Composition Explorer, or NICER, which will look closely at the mysterious stars. |
| Estas, Según el scientífico Zaven Arzoumanian, son pequeñas, de unos quince a veinte kilómetros de diámetro, pero pueden contener la masa de hasta dos de nuestros soles. Lo que las hace tan densas que una cucharadita de materia de una estrella de neutrón pesa unos diez millones de toneladas. | These, according to scientist Zaven Arzoumanian, are small, about fifteen to twenty kilometers in diameter, but can contain the mass of up to two of our suns. Which makes them so dense that a teaspoon of matter of a neutron star weighs about ten million tons. |
| *“En esos tipos de densidades no sabemos cómo se comporta la materia, no sabemos que es la materia, así que no sabemos de que está hecha la estrella de neutrón, no sabemos lo que ocurre dentro de ella.”* | *"In these types of densities we do not know how matter behaves, we do not know what the matter is, so we do not know what the neutron star is made of, we do not know what is happening inside of it."* |
| Pero, la Estrella de neutrón tiene otra característica potencialmente útil. Sus polos norte-sur emiten fuertes rayos-x, ya medida que giran rapidamente a velocidad constante. Si esos rayos brillen en nuestra dirección podemos verlos como balizas pulsantes. | But, the neutron star has another potentially useful feature. Its north-south poles emit strong x-rays and as they spin rapidly at constant speed, if those rays shine in our direction, we can see them as pulsating beacons. |
| La sincronización extremadamente estable de estas señales, y el hecho de que están en posiciones fijas con relación a la Tierra, las hace similares a los satelites GPS. En el experimento apodado SEXTANT, los scientíficos explorarán la posibilidad de usar pulsares para navegación interestelar precisa. | The extremely stable synchronization of these signals, and the fact that they are in fixed positions relative to the Earth, makes them similar to GPS satellites. In the experiment called SEXTANT, scientists will explore the possibility of using pulsars for precise interstellar navigation. |

**Vocabulary**

hito milestone

interestelar interstellar

suministros supplies

apodado nicknamed

SEXTANT Station Explorer for X-ray Timing and Navigation Technology (NASA experiment)

pulsares pulsars (type of star with a strong pulsating light)