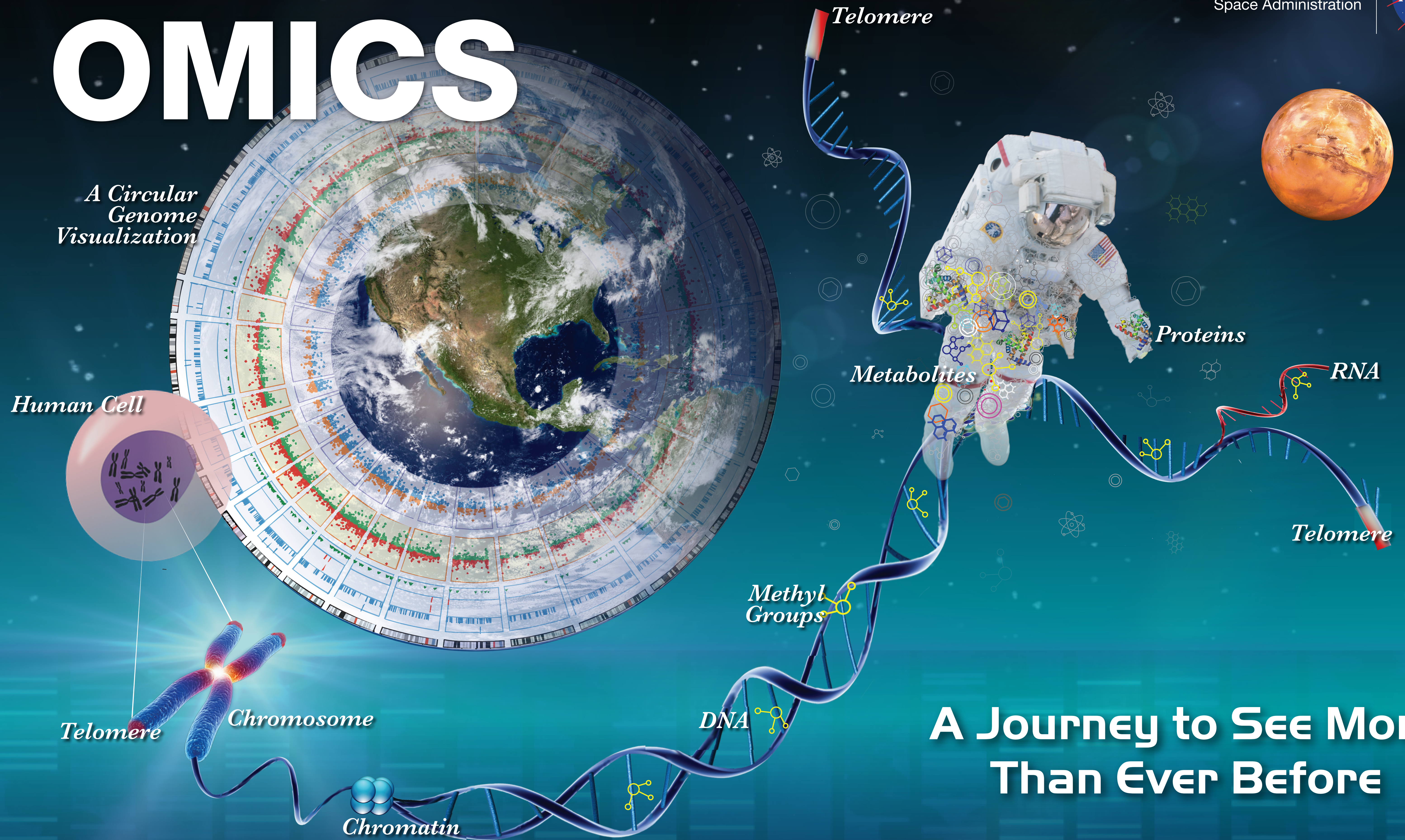
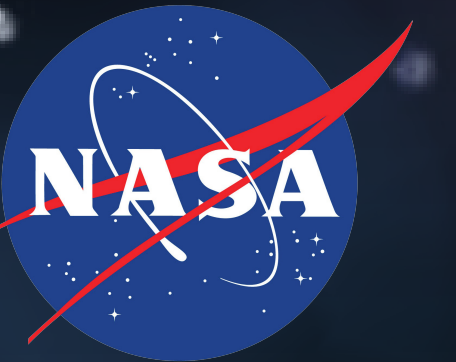
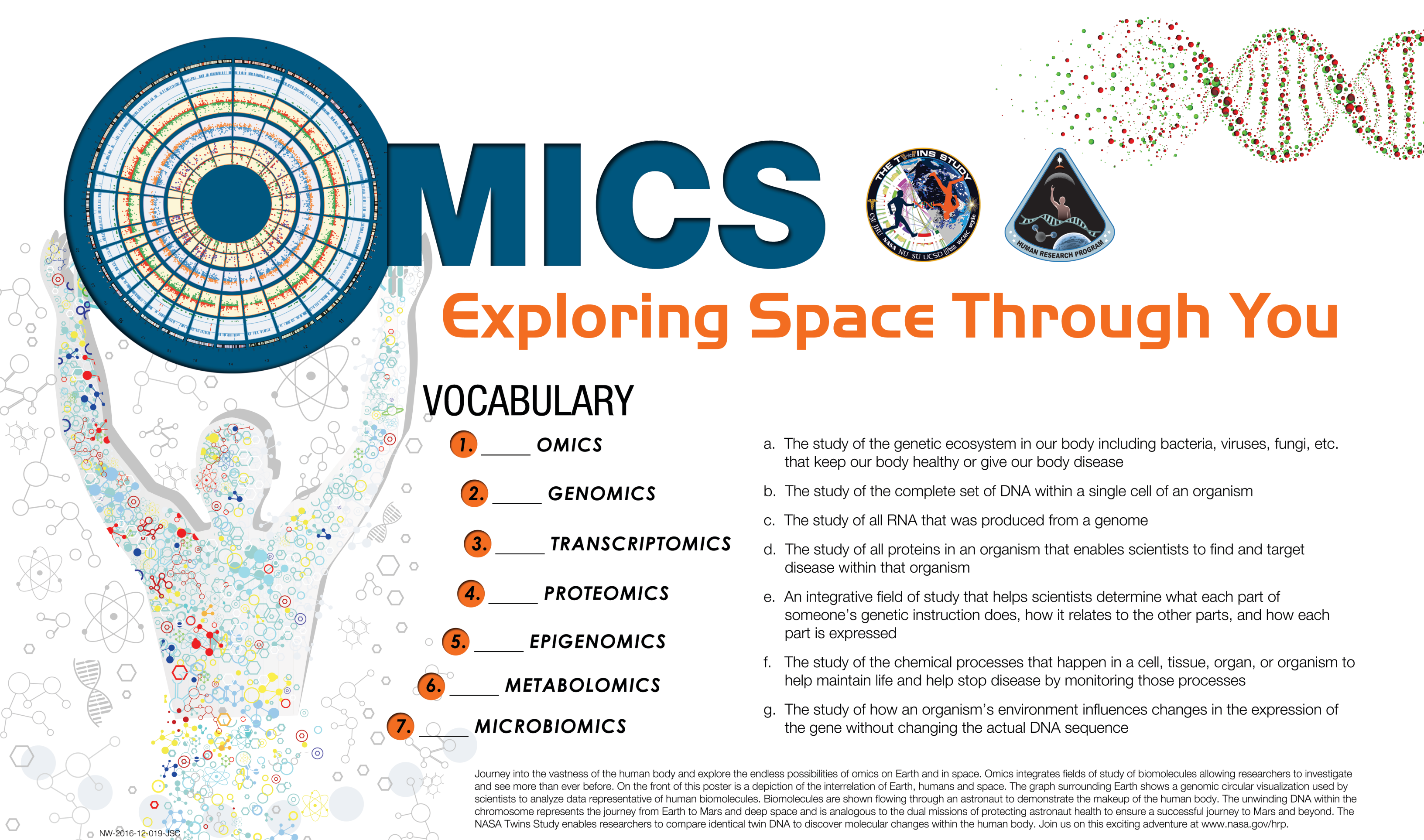


OMICS

National Aeronautics and
Space Administration



**A Journey to See More
Than Ever Before**



OMICS

Exploring Space Through You

VOCABULARY

1. _____ **OMICS**
2. _____ **GENOMICS**
3. _____ **TRANSCRIPTOMICS**
4. _____ **PROTEOMICS**
5. _____ **EPIGENOMICS**
6. _____ **METABOLOMICS**
7. _____ **MICROBIOMICS**

- a. The study of the genetic ecosystem in our body including bacteria, viruses, fungi, etc. that keep our body healthy or give our body disease
- b. The study of the complete set of DNA within a single cell of an organism
- c. The study of all RNA that was produced from a genome
- d. The study of all proteins in an organism that enables scientists to find and target disease within that organism
- e. An integrative field of study that helps scientists determine what each part of someone's genetic instruction does, how it relates to the other parts, and how each part is expressed
- f. The study of the chemical processes that happen in a cell, tissue, organ, or organism to help maintain life and help stop disease by monitoring those processes
- g. The study of how an organism's environment influences changes in the expression of the gene without changing the actual DNA sequence

Journey into the vastness of the human body and explore the endless possibilities of omics on Earth and in space. Omics integrates fields of study of biomolecules allowing researchers to investigate and see more than ever before. On the front of this poster is a depiction of the interrelation of Earth, humans and space. The graph surrounding Earth shows a genomic circular visualization used by scientists to analyze data representative of human biomolecules. Biomolecules are shown flowing through an astronaut to demonstrate the makeup of the human body. The unwinding DNA within the chromosome represents the journey from Earth to Mars and deep space and is analogous to the dual missions of protecting astronaut health to ensure a successful journey to Mars and beyond. The NASA Twins Study enables researchers to compare identical twin DNA to discover molecular changes within the human body. Join us on this exciting adventure at www.nasa.gov/hrp.

NW-2016-12-019-JSC

<http://www.nasa.gov/content/exploring-space-through-you-omics>

<http://www.nasa.gov/twins-study>

<http://www.nasa.gov/hrp>

Acknowledgement: Alex Munoz, NASA Intern, vocabulary quiz

ANSWERS: a. Microbiomics, b. genomics, c. transcriptomics, d. proteomics, e. omics, f. metabolomics, g. epigenomics