The Square Kilometre Array (SKA) will be the world’s largest radio telescope. It will be built in two phases - SKA1 and SKA2 - starting in 2018, with SKA1 representing a fraction of the full SKA. SKA1 will include two instruments - SKA1 MID and SKA1 LOW - observing the Universe at different frequencies.

Astronomers assess a telescope’s performance by looking at three factors - resolution, sensitivity, and survey speed. With its sheer size and large number of antennas, the SKA will provide a giant leap in all three compared to existing radio telescopes, enabling it to revolutionise our understanding of the Universe.

SKA1 LOW x135
LOFAR NL
SKA1 MID x60
JVLA

RESOLUTION
Thanks to its size, the SKA will see smaller details, making radio images less blurry, like reading glasses help distinguish smaller letters.

SURVEY SPEED
Thanks to its sensitivity and ability to see a larger area of the sky at once, the SKA will be able to observe more of the sky in a given time and so map the sky faster.

SENSITIVITY
Thanks to its many antennas, the SKA will see fainter details, like a long-exposure photograph at night reveals details the eye can’t see.

As the SKA isn’t operational yet, we use an optical image of the Milky Way to illustrate the concepts of increased sensitivity and resolution.