How to observe the Mercury transit

On May 9, 2016, a transit of Mercury across the face of the Sun takes place. Mercury transits are relatively rare events which can be observed from much of the world. However, since they involve viewing the sun, extreme caution must be taken. A safe method to observe the transit without ever looking at the sun is through optical projection. Warning: never look directly into the sun.

The first step is to fix a pair of binoculars on a tripod. Binoculars with 10x magnification will work fine. Higher magnification will give you a better image, but it will be a bit harder to find the sun. Remember, whichever method you use, Mercury will appear as a very tiny black dot on the disc of the sun.

Cut out a cardboard shield and tape it to the front of the binoculars, with the lenses sticking through holes. One of the binocular lenses can be covered, since it will only need one lens. Use duct tape to seal any holes that leak light past the cardboard. Without ever looking directly at the sun through the eyepiece, point the binoculars towards the sun while holding a piece of white cardboard about a foot behind the eyepiece. It will take a little effort to find the image of the sun. Once you do, you can focus the binoculars to create a sharp image of the sun. Be very careful not to put your hand or anything flammable near the eyepiece. The concentrated sunlight exiting there can cause a nasty burn or set something ablaze.

Now you can watch a beautiful, bright, magnified image of the sun as the transit proceeds. You might have to adjust the tripod to account for the earth's rotation. Also, you might want to give your binoculars a cooling break every now and then. The eyepiece can become overheated and the lens elements may be damaged if you leave it focus on the sun for too long.

For further details, visit www.exploratorium.edu/transit/optical-instructions.pdf.

The truth is that processing power alone does not give intelligence or cognition. After all, the computer that beat a human at Go was created by humans. Until humans are taken out of the loop for good, there can be no such event as ‘singularity’.

This does not eliminate the need for serious and dedicated studies into the societal changes brought about by AI. From navigation systems to medical advancements, from new manufacturing processing to unmanned air and land vehicles, we can already see many applications involving robotic decision-making and intelligence.

More importantly, AI has become fertile ground for social, ethical and legal studies to best address the next big revolution of the 21st century.

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