# Article information:

High-Efficiency, 80 mm Aperture Metalens Telescope | Nano Letters  
<https://pubs.acs.org/doi/10.1021/acs.nanolett.2c03561>

# Article summary:

1. Telescopes have been used for centuries to observe the stars, but their resolving power is limited by their aperture size.

2. Metasurfaces and metalenses offer a new approach to recasting optical components into flat devices with reduced size and weight.

3. This article presents a new 80 mm aperture, high-efficiency, refractive metalens telescope capable of observing celestial bodies such as the moon, which was fabricated on a four-inch silicon wafer with deep-ultraviolet (DUV) projection stepper lithography.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy in its reporting of the development of an 80 mm aperture, high-efficiency, refractive metalens telescope capable of observing celestial bodies such as the moon. The article provides detailed information about the design and fabrication process of the telescope, as well as its performance in terms of focusing efficiency and imaging tests. The authors also provide references to support their claims throughout the article.

However, there are some potential biases that should be noted in this article. For example, while the authors discuss various fabrication techniques for large-aperture metalenses such as nanoimprinting and photolithography, they do not mention other possible methods such as 3D printing or laser ablation that could be used to fabricate these lenses. Additionally, while the authors discuss potential applications for this technology such as planetary observation and remote sensing and imaging, they do not explore any potential risks associated with these applications or any ethical considerations that should be taken into account when using this technology.

In conclusion, while this article is generally reliable and trustworthy in its reporting of the development of an 80 mm aperture metalens telescope, it does contain some potential biases that should be noted when evaluating its trustworthiness and reliability.

# Topics for further research:

* 3D printing metalenses
* Laser ablation fabrication techniques
* Planetary observation risks
* Remote sensing ethical considerations
* Large-aperture metalens applications
* High-efficiency refractive telescope imaging tests

# Report location:

<https://www.fullpicture.app/item/fe6ecd4959723a764c82935b8f1e8408>