Using a civilian telescope to observe solar power generation

Why do remote and off-grid telescopes emit a lot of energy?
The operational emissions of remote and off-grid telescopes primarily stem from their reliance on fossil fuel generatorsto meet their energy needs. This demand of mainly electrical energy is needed to power the dish motors and supply the cryogenic cooling for the instruments.

What is the Astronomical Observatory project?
It is the first astronomical observatory project that includes plans for an off-grid, completely renewable energy system right from its design phase (Klaassen et al. 2020; Ramasawmy et al. 2022). The results of this project will inform future efforts in other remote locations.

How many days a week do telescope workers fly in?
In the operation of telescopes in the Atacama,personnel typically fly in for 8-dayshifts,after which they fly home and are off-duty for 6 days. In the LCI for the maintenance workers,we include one return-trip from Santiago de Chile to the energy system site per week per worker.

Why do we need a multiscale Observatory?
The physics and dynamics of the Sunnecessitate a multiscale problem that can only successfully be understood with improvements to observations of solar activity. With each new mission or telescope,improved spatial and temporal resolution leads to new discoveries.

How much energy does the ATLAST telescope need?
The AtLAST telescope,which will have a 50-m diameter primary mirror and will operate at both day and night,has an expected daily energy demand of 22 MWh e,which exhibits relative stability on an intraday basis but varies seasonally due to the addition or removal of instruments.

Can a telescope detect high-temperature solar plasma?
High-temperature solar plasma emits radiation primarily at EUV and x-ray wavelengths,which must be observed from space. But no conventional reflecting telescope has been fabricatedwith the extreme accuracy and smoothness necessary to achieve diffraction-limited imaging at those wavelengths.

Why we recommend it: The telescope"s simplicity and included educational materials make it a perfect telescope for igniting a beginner"s interest in space. Product details : Type : Refractor

The Space Telescope Solar Array (STSA), which is supplying the power for the Hubble Space Telescope (HST), is the largest flexible solar array built to date, carrying 48760 back surface ...

the photometric precision under variations in the model input parameters for high-resolution solar images

consistent with four-meter class solar telescopes. Methods. Using simulations of both ...

The 130mm aperture gathers enough light to see our Solar System and beyond. View Saturn"s rings, Jupiter"s cloud bands, and the Moon in brilliant detail. ... So, the more resolving power a telescope has, the more it ...

Choosing a Solar Telescope. While you can obtain dedicated or semi-dedicated white-light solar telescopes, if you have at least $600 to spend, you can buy a hydrogen-alpha telescope. We recommend reading our Best Solar ...

For the generation of electricity in far flung area at reasonable price, sizing of the power supply system plays an important role. Photovoltaic systems and some other renewable ...

Today, solar power is widely used for terrestrial applications and is rapidly increasing its share of the power generation mix as a result of the plummeting cost and rising efficiency of solar cells. 7 Yet the expansion of ...

The Explore Scientific 12in/305mm Truss Tube Dobsonian Telescope offers a significant light-gathering capability for deep-sky observations. With a massive 12-inch aperture, it is capable ...

Pulsar Timing with the Next Generation of Radio Telescopes ... the precision of the timing models in the Solar system is discussed, using the widely used software package TEMPO2 as an ...

the primary goal of using a telescope is NOT to magnify. Of more importance is to resolve objects that are very faint. A typical backyard telescope may only use magnifications from about 30 ...