

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention is directed generally to devices and methods for collecting and concentrating light emanating from outer space and celestial bodies, including, but not limited to, stars, planets, moons, and comets. More specifically, the invention involves interstellar light collection apparatus and methods for collection, selection of component wavelengths (e.g., through dispersion), and application of interstellar light to matter for investigative purposes.

2. Background of the Invention

Since the dawn of time, "light" (i.e., the electromagnetic spectrum) has been instrumental in everything from photosynthesis to modern photography. Solar light has been harnessed in photovoltaic cells to create electricity, light has been manufactured artificially to promote plant growth, and even non-visible light has been used in various medical applications such as X-rays and tumor detection devices.

Indeed, a large quantity of background reading is available on the subject of the industrial and medical application of light (see, for example, National Research Council, *Harnessing Light: Optical Science and Engineering for the 21st Century*, National Academy Press, 1998; Kaler, James B., *Stars and Their Spectra: An Introduction to the Spectral Sequence*, Cambridge University Press, 1989; Scranton, Bowman, & Peiffer, Editors, *Photopolymerization: Fundamentals and Applications*, American Chemical Society, 1996; and Kalyanasundaram & Gratzel, *Photosensitization and Photocatalysis Using Inorganic and Organometallic Compounds*, Kluwer Academic Publishers, 1993).

Current technologies for collecting celestial light involve the use of "light buckets," i.e., optical receiving telescopes that collect photons but are not diffraction limited. In other words, a light bucket cannot concentrate photons into a very small tightly focused spot.

Accordingly, light bucket technologies are hampered by the inability to concentrate light as would be useful in various methods of application, such as lasers. Moreover, traditional telescopes do not provide a means for dispersing focused

light into component spectra for industrial or medical experimentation and application.

Thus, there exists a need for methods and devices for improved collecting, concentrating, and dispersing celestial light.

SUMMARY OF THE INVENTION

The invention relates in general to devices and methods for celestial light collection, concentration, and application. More specifically, the invention includes devices and methods for collecting, concentrating, and separating celestial light of different wavelengths and frequencies by utilizing a collection mirror and a means for dispersion located at a focal point.

It is the intended use of the inventive device to collect and harness interstellar light in order to utilize the uniqueness of its spectra for the benefit of humankind through various applications. Hence, the invention will collect, harness and apply the spectrums and intensities of the stars and other celestial bodies, which are notably different from the spectrum of the sun, and furthermore cannot be duplicated anywhere on earth.

This invention builds upon the principles and technology of basic telescopes. Instead of merely looking upon celestial bodies from earth, the present invention collects and concentrates light from celestial bodies down from the heavens and separates that light into various spectrums.

In one embodiment, the inventive method includes the steps of collecting light from a celestial source by utilizing a mirror, focusing the light collected by the mirror to a focal point, dispersing the focused light utilizing an aperture located at the focal point, and exposing terrestrial matter to at least a portion of the dispersed light.

Thus, it is a primary objective of the invention to provide a celestial light collector for concentrating and selecting light from celestial sources.