

"The Use of Color in Interstellar Message Design"

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Abstract

Here we consider color as a medium for interstellar messaging, and specifically compare possible uses of color with existing efforts in the area of interstellar communications (e.g., the Voyager Interstellar Record). Our analyses show that color, as we experience it, is a uniquely human construct and is not very useful for communicating with ETI, and that even the most highly salient human color experiences are seriously limited as a basis for communicating across both terrestrial and extraterrestrial species. With respect to designing interstellar messages, we examine the assumption that color can be appropriately used for index or organizational use, for representing physical scale values, for showing details of biology, or even for conveying beauty. This perspective differs considerably from the message design principles inherent in existing ETI messaging efforts. We show, however, that despite the difficulties of using color as a human-ETI code, the physical basis of color -- namely physical features of solar spectra -- may prove to be of use in interstellar message design, especially if it is communicated in the proper manner with consideration given to the scale and formatting of the data features used. Use of different presentations of the solar spectrum can provide star-specific, planetary-specific, and species-specific information that no single spectrum can provide,