

Enhancing the Novice Optical Telescope

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Abstract

This project attempts to visualize and model modifications to the Tasco “Novice” telescope in order to provide users more convenience and comfort. While the small personal telescope was functional, there were some limitations that could be a hindrance to users. The telescope originally contained a tripod that could not collapse completely for transportation and storage due to a triangular accessory stand located between the legs. The telescope also did not include lenses that provided users with a place to rest their face against the eyepiece at the appropriate distance from the lens for viewing; thus, users often struggled to readjust their eyes to the appropriate distance to focus. When switching magnification, the telescope required users to completely remove, store, and replace lenses, which could be a hassle. Finally, the telescope did not contain a location for users to store their personal items, forcing users to set items flashlights, cellphones, and bug spray on the ground. Therefore, in order to combat the inconveniences with the original telescope design the team first modeled the original design, then envisioned and modeled improvements. The improvements included a new system for spreading and folding the tripod legs, a cushioned eyepiece, a rotating lens system, and a pouch for holding miscellaneous items while using the telescope. An adjustment handlebar was also added to facilitate the ease of changing the direction which the telescope is pointed. With these modifications, the telescope was made more ergonomic and user-friendly.