

Sample Abstracts

The following are sample abstracts from formal written reports of projects studied in previous semesters. The names listed are the names of the group members who performed the project study; the bolded names are the authors of the abstracts. You may use these sample abstracts to give you ideas about your own project topics, but you may *not* plagiarize a project topic directly from one of the abstracts listed below.

The Physics of Night Vision, by Seth Kovaskitz, **Ginny Barton**, and Susanne Stauffer

Night vision devices are one of the most fascinating technologies in use today. These devices have their origin in military research and development; however, it is the non-military applications that have led to the advancement of this technology. These intriguing devices allow the human eye to see in almost complete darkness. Night vision devices amplify existing light, such as star light or moonlight, instead of relying on a light source of their own. The primary basis of these devices is physics. It is important to understand that when using a night-vision device, one does not look through it, one looks at the amplified electronic image on a phosphor screen. The objective lens collects photons and focuses them on the image tube. The photocathode converts this light energy into electrons, which pass through the micro-channel plate. As the electrons pass through the channels, they are amplified thousands of times and then strike a phosphor screen, which converts them back into photons and provides the image one sees on the screen. The physics that night vision devices rely on make them very fascinating. The future for night-vision devices is very exciting, and with the use of physics and the modern day applications available, it is sure to advance very quickly.

Temperature of Stars, by **Ambra Wilson**, Jessica Agee, Larry Haddox, and Cara Robeson

The purpose of our project was to use some of the techniques learned in class and apply those techniques to astronomy, commonly called astrophysics. Our group decided to study the various ways that the temperature of stars can be determined, specifically by using Wien's Law and spectroscopy. We also decided to study the HR-diagram because it makes use of the temperature of stars by plotting luminosity versus temperature. In some astronomy journals the HR-diagram is called the beginning of modern astrophysics. Our group focused on the evolution of a star; however, it must be noted that this diagram has helped astronomers in many other ways. As a group, we found that understanding how the temperature of a star is found is fairly straightforward after studying modern physics in class this semester.

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