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Conceived in the 1940s as the Large Space Telescope, the Hubble Space Telescope became the most significant development in astronomy. Why was it needed? No matter how big and accurate a terrestrial telescope could be made, it would always be severely limited because of the earth's atmosphere. Building a telescope to operate above the atmosphere would open up the things that could be seen to essentially the whole universe. Finally, we can see deeper into space than ever before. After decades of research and planning, the Hubble Space Telescope was finally launched into space on April 24, 1990.

This incredible telescope has expanded the field of astronomy and our knowledge of the universe well beyond our very limited knowledge prior to its launch. It led to determining the age of the universe, a much better understanding of our own solar system, as well as our being able to peer into the deepest recesses of the universe.

Our cover is a Hubble picture of the "Pillars of Creation." It is a picture taken deep within the galaxy and is of the Carina Nebula. Rising from the wall of the nebula, dust and towers of cool hydrogen mix to create this beautiful and dramatic image!

For more about Hubble, go to NASA's website: www.nasa.gov/

Features

A course in circuit analysis is perhaps the first exposure students have to electrical engineering. This is also a place where we can enhance some of the skills that they will later need as they learn how to design. An important part of this book is our 121 *design a problem* problems. These problems were developed to enhance skills that are an important part of the design process. We know it is not possible to fully develop a student's design skills in a fundamental course like circuits. To fully develop design skills a student needs a design experience normally reserved for their senior year. This does not mean that some of those skills cannot be developed and exercised in a circuits course. The text already included open-ended questions that help students use creativity, which is an important part of learning how to design. We already have some questions that are open-ended but we desired to add much more into our text in this important area and have developed an approach to do just that. When we develop problems for the student to solve our goal is that in solving the problem the student learns more about the theory and the problem solving process. Why not have the students design problems like we do? That is exactly what we do in each chapter. Within the normal problem set, we have a set of problems where we ask the student to design a problem to