

ON THE COVER

Merging black holes produce a clangor of gravitational waves. This snapshot is from a 2002 simulation by the Albert Einstein Institute in Germany, with assistance from the Zuse Institute Berlin and Louisiana State University. At the time, it was one of the most advanced ever done, tracing three quarters of an orbit. Now, thanks to a Caltech breakthrough, multiple orbits are routine. A Caltech-Cornell team continues to lead in producing the most accurate simulations to date. Read more on page 34.

50 YEARS OF E&S

50 YEARS AGO

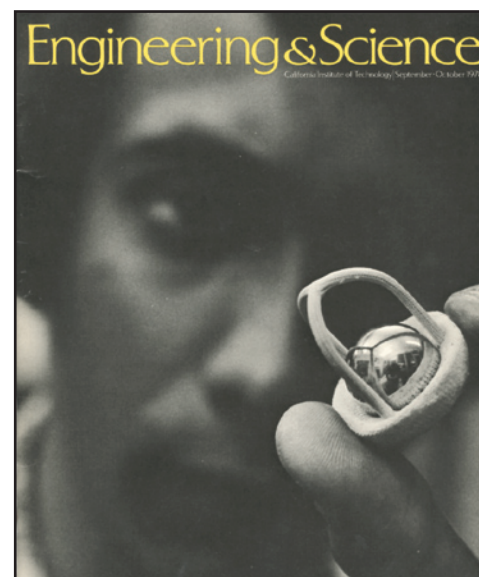
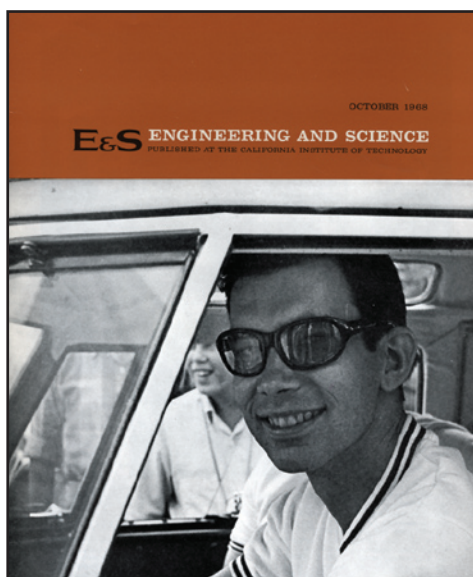
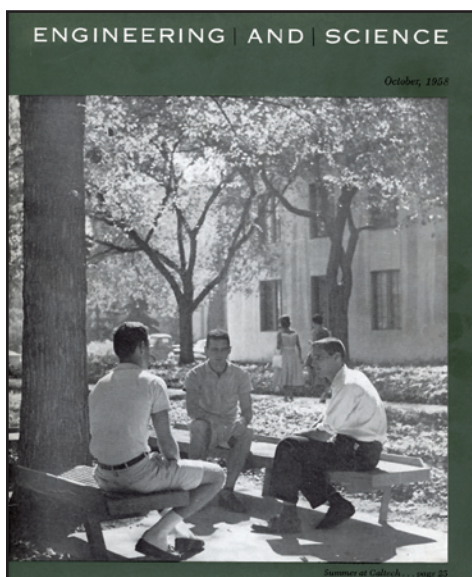
James Bonner (PhD '34), acting chair of the biology division, wrote about “stirring times in the world of biology.” He described how methods for separating cells into their component parts, invented at Caltech and elsewhere, were allowing scientists to discover how proteins are synthesized.

40 YEARS AGO

The summer of '68 saw the Great Electric Car Race, a cross-country competition between Caltech and MIT organized by Wally Rippel (BS '68), seen here at the wheel of his converted '58 VW bus. The Tech men took off toward Cambridge, while MIT's electrified '68 Corvair made its way to Pasadena. The trip, anticipated to be less than five days, took MIT seven and a half; Caltech rolled in more than 37 hours later. But after penalties were taken for things such as being towed and using a portable generator between official recharging stations, the tortoise had beaten the hare: Caltech's corrected time was 30 minutes faster than MIT's.

30 YEARS AGO

Chemical engineering professor William H. Corcoran and research fellow Ajit Yoganathan collaborated with local cardiologists to study the fluid dynamics of artificial heart valves. Yoganathan holds one such device for the camera.



As you might have noticed, *Engineering & Science* has a new look. We'd like to know what you think—e-mail your comments (or letters to the editor in general) to Douglas L. Smith, editor, dsmith@caltech.edu.