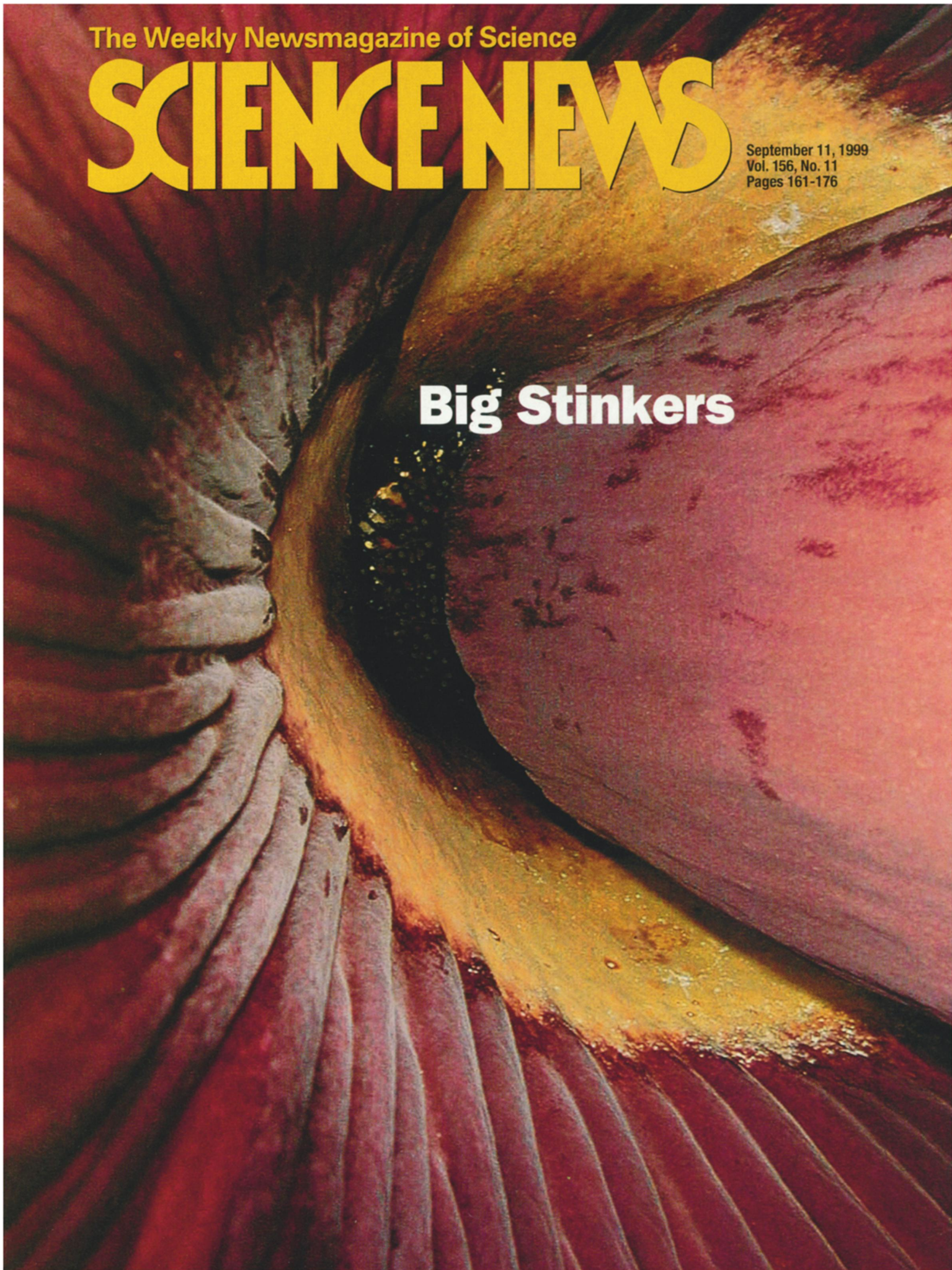


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Big Stinkers



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Fred Adams and Greg Laughlin captured the attention of the world when they announced they had identified the five ages of time. But is it possible for us to know the complete life story of the universe from beginning to end? The astonishing truth is that recent studies have defined the essential mechanisms of astrophysics so well that science can now determine the five ages that the universe will go through over its 10,000 trillion-trillion-trillion-trillion-trillion-trillion-trillion-trillion-year existence. We now know how the cosmos was born, how it grew up, how it will shuffle into its old age, and how it will celebrate its googolth (10^{100}) birthday. With *The Five Ages of the Universe*, the mythologies of eternity and the apocalypse can now be matched against scientific fact.

The ages that Adams and Laughlin have defined are as scientifically significant as the eras and periods of geological time. The first is the Primordial Era, which began with the Big Bang, witnessed the victory of matter over antimatter, and generated the light elements of the periodic table we know today. The second is the Stelliferous Era, the era in which we live, dominated by the life-giving brilliance of stars. The third is the Degenerate Era, when brown dwarfs and dark matter will rule and life as we know it will perish. The fourth is the Black Hole Era, when the radiation predicted by Stephen Hawking will be the only light created. The fifth and final is the Dark Era, when phase transitions might reconstruct the universe. Adams and Laughlin investigate the nature of complexity in each of these five eras, including the possibility of computation, communication, and carbon-based life, indeed, of any kind of life. Amazingly, such possibilities will exist in ages to come, and the authors have included extraordinary examples built into the descriptions of each period.

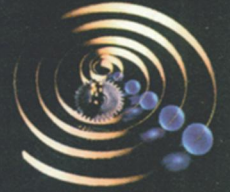
Adams and Laughlin study the far future of a universe that, according to current astronomical observations, will expand forever. They show what will actually happen if a black hole enters our solar system, how life might exist beyond the atmosphere of a white dwarf, and even how new universes could be produced and how we would travel to them.

—from Free Press

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THE FIVE AGES OF THE UNIVERSE

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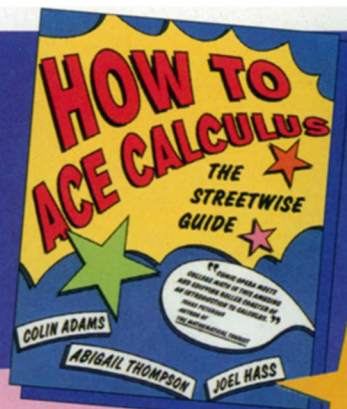
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