



GEOSCIENCE NEWSLETTER

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GRI ONLINE

Recent GRI blogs include:

Pterosaurs of the Triassic. Learn more about the abrupt appearance and diversity of these extinct flying reptiles.

Design in the Physical Universe. Design can be seen in the physical environment of our Earth, in the solar system, and in the very structure of the universe.

Creation, Flood and Biogeography. Dispersal, speciation and extinction all affect the distributions of species. Each of these processes might be involved in a model of earth history that incorporates a global flood. The blog is divided into three parts:

Part 1, patterns and processes;

Part 2, the flood and biogeography;

Part 3, flood effects on species distributions.

Follow Us on Facebook

Our ***Facebook page*** has regular comments on creation and science, with quick easy-to-read notes on interesting ideas and discoveries.

UPCOMING EVENTS

Creation Talks for North American Division Pastors

Two GRI scientists will be presenting creation talks at the NAD Pastors' convention in Austin, Texas, June 28-July 1, 2015. Tim Standish and Jim Gibson will present talks on creation and science and manage a booth where materials and further information will be available.

GRI Booth at the GC Session

GRI and the Faith and Science Council are teaming up to sponsor a booth at the General Conference Session in San Antonio, Texas, July 3-11, 2015. The booth will feature displays and materials

relating to creation and science, emphasizing the theme of design in creatures of aquatic habitats.

Video Showings in San Antonio

“Yes! Creation” is a series of special events that will feature showings of several new videos during the General Conference Session. *Living Waters*, the newest film from the Discovery Institute, presents beautiful footage as it discusses evidence for intelligent design in aquatic creatures such as whales, turtles, salmon, and jellyfish. *Seeking Understanding* is a series of videos on the lives and work of three Seventh-day Adventist scientists: Harold Coffin, Ariel Roth, and Randy Younker. Several other video presentations are planned, providing a pleasant learning experience for those attending the GC Session.

GRI ACTIVITIES

Creation Celebrated at Sahmyook University

The GRI organized a Celebration of Creation November 7-8 at Sahmyook University in Seoul, Korea. The program



Dr. Tim Standish of GRI and translator address the group at the Celebration of Creation.

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featured lectures from 3 members of GRI, along with an anthropologist from the Philippines, and four Koreans, including the GRI branch office Director for Asia, Dr. Choi Chong Geol. Celebrations of Creation are held each year, and sponsored by the Faith and Science Council and the GRI.

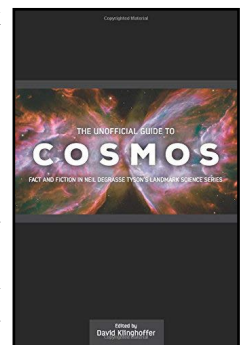
NEW: EVERY SCHOOL SHOULD HAVE

Klinghoffer D. 2014. Unofficial Guide to Cosmos: Fact and Fiction in Neil deGrasse Tyson's Landmark Science Series. Seattle, WA: Discovery Institute. Paper. \$14.36

Cosmos, a Spacetime Odyssey is a 13-part television series using science to promote an overtly atheistic worldview. With a congenial host, interesting computer graphics, and a mixture of science and philosophy, *Cosmos* is explicitly intended to convert the next generation of school children to atheism. The result is a powerful but deceptive message that is hostile to Christian faith.

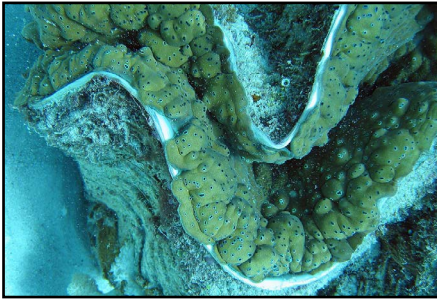
This new book points out factual errors, omissions, and exaggerations in the *Cosmos* series and will help parents and teachers deal with the atheism strongly promoted in the series.

Every parent, and especially every teacher, ought to have a copy. Better yet, show your children the spectacular videos available that show the evidence for a Creator. A good place to start is here: <http://grisda.org/resources/recommended-reading-list/top-ten-recommended-videos/>



SCIENCE NEWS

Design in the Giant Clam



Close-up of mantle of giant clam. Photo by janderk, public domain.

Holt AL et al. 2014. Photosymbiotic giant clams are transformers of solar flux. *Journal of the Royal Society Interface*: 2014 11 20140678; DOI: 10.1098/rsif.2014.0678.

Summary. Giant clams (*Tridacna*) obtain a significant portion of their food from symbiotic dinoflagellate algae (*Symbiodinium*). The single-celled algae live intracellularly in the mantle of the giant clam, as well as in many kinds of corals, sea anemones, and other marine invertebrates. The alga is photosynthetic and its presence promotes deposition of calcium carbonate in corals.

The mantle of the giant clam is usually covered with a layer of spherical, iridescent cells, known as iridocytes. Algal cells lie directly beneath the iridocytes, but not in a continuous horizontal layer. Instead, they are arranged in vertical “pillars,” meaning some cells reside deeper in the tissues, where light would be greatly reduced. It turns out that the iridocytes function as lenses that spread the light vertically so that the algal cells in the “pillars” are evenly illuminated. In addition, the iridocytes transmit light especially in the red and blue wavelengths, but less efficiently in the yellow and green wavelengths. The algae utilize mainly red and blue light for photosynthesis, so the reduction of yellow and green wavelengths has no negative effect. This remarkable system of iridocytes benefits the algae by providing the proper wavelengths needed for photosynthesis, and also by reducing excessive light levels to those the algae can tolerate well. The resulting

distribution of light supports more photosynthesizing algal cells than possible with a simple horizontal layer of algae.

Comment. The mutually beneficial relationship between giant clams and their symbiotic algae is another example of cooperation in nature, consistent with the idea of a beneficent Creator. This impression is strengthened by the apparent efficiency of design in the arrangement of clam and algal cells in the mantle of the clam.

Rapid Changes in Lizards

Stuart YE et al. 2014. Rapid evolution of a native species following invasion by a congener. *Science* 346:463-466.

Summary. Competition between closely related species is expected to produce a shift in behavior and/or morphology in one or both species. This phenomenon is called “character displacement,” and is widely believed to be important in nature. However, specific



Anolis carolinensis. Photo by Lycaon. License CCAS3.0. Wikimedia Commons.

examples of character displacement are rare. Evidence confirming expectations has been provided by a study of two species of *Anolis* lizards in Florida.

Anolis carolinensis is native to Florida. *A. sagrei* is an ecologically similar species that is expected to compete with *A. carolinensis* where they coexist. In this study, *A. sagrei* was introduced to three small islands that previously had only *A. carolinensis*. Individuals of *A. carolinensis* on two-species islands were observed and compared with those on one-species islands. Results showed that *A. carolinensis* occupied higher perches in the presence of *A. sagrei* than when *A. sagrei* was absent. The change in behavior also correlated with a change in the morphology of the toepads. The morphological change took less than 20 generations to occur.

Comment. Scientists are increasingly recognizing that small changes may occur rapidly in populations. The discovery of rapid changes in species may have been hindered by expectations based on interpretations of the fossil record as showing changes over vast periods of time. The rapidity of change in real time suggests the possibility of fruitful reevaluation of the long ages commonly inferred in the fossil record.

Do such small changes add up to explain large evolutionary changes? You may also like to read:

Laland K et al. 2014 Does evolutionary theory need a rethink? *Nature* 514:161-164.

Gentle Reminder About Science

Anonymous. 2014. Dust to dust. What lessons can be learned from the presentation of the gravitational-waves story? *Nature* 14:273-274.

Summary. In March, 2014, a team of scientists announced they had found evidence for gravitational waves, thus fulfilling a prediction of Big Bang theory. The announcement was greeted enthusiastically and widely disseminated. However, other scientists pointed out that the results could have been affected by dust in space. It now appears that the evidence for gravitational waves is not persuasive, and a more cautious attitude is seen.



Dust cloud in our Milky Way galaxy. Herschel Space Observatory, Public domain.

Comment. What scientists can learn from this experience is that researchers should not be afraid to be wrong, but that peer review and careful process help promote the reliability of science. We should all remember that most science is a work in progress, not a final answer.