The High Desert Observer

The Bulletin of the Astronomical Society of Las Cruces

September, 2008

Presidential Prelude

Hello, fellow astronomers! Hopefully you're looking forward to the end of monsoon as much as I am. Observing & imaging opportunities have been quite limited, but did you notice – there have been more clear evenings recently. I take that as a good omen…as Steve B says, "Make with the positive vibes, man!"

Despite the slow pace of activities now, this fall has much to anticipate. Educationally, we already have several requests from teachers for local classroom visits – and anticipate more. Unfortunately Rich's plea for volunteers to go & speak briefly about astronomy has not gotten much response. Please consider (or re-consider) if you can help out even a little – our kids really need some inspiration that could motivate them to pursue science & even astronomy. Remember, "As our youth goes, so goes our nation." [Don't make me get on my soapbox! ;~)]

Another indication of a healthy & active fall ahead – we are still adding new members to our roles! Welcome these new faces when you see them. Just maybe some of these guys are new to astronomy and will be interested in taking our fall "Introduction to Amateur Astronomy" course set to start next week – just contact our education guru Rich Richins. We need more students to make the course a "Go"!

Coming down the pike? An astro-equipment garage-sale (Philip Herron's stuff) in October, planning for the Ren Faire, our Christmas party, IYA 2009, etc. And don't forget - we must form a nominating committee for 2009 ASLC officers very soon…start considering what role you might have in next year's club.

So what is IYA 2009? If you don't know, relax – you soon will! Mucho info to follow very soon (how's that for a teaser?!).

I purposely delayed mentioning one immediate & significant club activity – WSSP IX! It's coming at month's end and the ASLC has a major role in this newly updated regional astro-event. Thus I want to encourage anyone & everyone to participate in this year's activities – it's a great way to connect with other area astronomers and learn something new. Even if you don't intend to register for the Party consider coming on out on Saturday evening for the speaker & public observing session. Tell your family & friends and/or invite them along to see what a "real" star party is like! For complete info see the article herein.

By the way, folks - have you been following the Hatfield's 'Quest for Dark Skies' thread on our YahooGroup? I have, and find myself both inspired & envious! George & Pat have assessed & reported on viewing conditions in many of the most awesome natural locations in the western US, and have presented both qualitative & quantitative data on astronomical sky quality. Both are enjoyable & useful on several levels….

Till next time… Stellar Stargazin'! — Nils

The Astronomical Society of Las Cruces (ASLC) is dedicated to expanding members and public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties, and provides opportunities to work on club and public educational projects. Members receive *The High Desert Observer*, our monthly newsletter, membership in the Astronomical League, including AL's quarterly *A.L. Reflector*. Club dues are $35 per year. Those opting to receive the ASLC newsletter electronically, receive a $5 membership discount. Send dues, payable to ASLC with an application form or a note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004.

ASLC members are entitled to a $10 discount on subscriptions to *Sky and Telescope* magazine.

This Month's Observer

Next Meeting

The next monthly meeting will be held September 19th at 7:30 pm in the usual place (Main Campus of the Dona Ana Community College, room 77). The speaker will be Club President Nils Allen: IYA2009: Many Things to Many People." How can an international celebration of astronomy stimulate worldwide interest in our favorite pastime? Can astronomers & astro-clubs in New Mexico benefit?

Astro-Tidbits meets at 7:00 pm. Anyone is welcome to attend these special interest group pre-meetings.

Other events planned for September include:

White Sands Star Party, Saturday, September 27th, at dusk.

Dark Sky Observing at the Upham dark sky site, Saturday, September 27th, at dusk.

Please see the ASLC website for further information:

http://www.aslc-nm.org.

October Issue of the *HDO*

Articles for the Ocober issue should be sent to Tony Gondola by Friday, October 10th. Text should be sent as email (acgna@comcast.net) or as an attached Microsoft Word document. Images should be sent in jpg format.

If you have any questions about submitting something to the *HDO*, please don't hesitate to contact me at 571-5118 or via email. Thanks in advance!
Tony Gondola, Editor, ASLC Newsletter

Minutes, August 2008 ASLC Meeting

Call to Order:

Nils Allen, President, Astronomical Society of Las Cruces (ASLC), called the meeting to order at 7:35 pm., 22 August 2008, Rm. 75, Dona Ana Community College.

President's Comments:

Nils Allen, Club President, welcomed the group and recognized and greeted Rene Garcia and John Gutierrez, teachers at Zia Middle School, and Barbara Stewart and Bonnie Bean. Barbara is a teacher at Picacho Elementary School. The teachers were present as a result of an "AstroAlert" issued by Rich Richins.

Secretary's Report:

The minutes for the June meeting were submitted as published in the current issue of the Club newsletter, the *High Desert Observer* (HDO). A motion to accept the minutes as published and dispense with the reading of same was offered by Jerry Gaber and seconded by Rich Richins. The motion passed by acclamation of the members present.

Treasurer's Report:

The treasurer reported on the status of the Club's accounts.

Committee Reports:

Observatory Committee:

Jerry Gaber, Construction Sub-Committee Chairman, Observatory Committee, reported that the electrical drawings from the electrical engineer were still pending. Once these are received, committee members will meet with park personnel. There was no additional progress to report.

White Sands Star Party (WSSP) IX, 26-27 September 2008:

Nils Allen gave an update on planning for the mini-workshop sessions, stating that he had a good mix of topics available. He still needs volunteers for almost all areas, but especially speakers. Fred Pilcher volunteered to conduct a workshop. August 8th is the deadline for early (i.e., discounted) registration. Nils suggested the membership mention WSSP to the general public as often as possible.

There were no additional standing committee reports.

Old Business:

1. Meade SolarMax telescope – no status update was available. For the time being, usage will be coordinated through the Board of Directors.

2. Club logo/insignia apparel – Steve Henderson was not present but might put together another order of Club apparel. A follow-on order to cover additional articles of clothing of popular sizes or other types of apparel, i.e., jackets, sweatshirts, vests, etc., is possible if there is sufficient Club member interest. Contact Steve or Nils with your requests.

New Business:

1. September 2008 monthly meeting – The fourth Friday in September falls on the 26th, the first night of WSSP IX. Nils Allen suggested moving the monthly meeting forward one week. Janet Stevens presented a motion to move the September 2008 ASLC monthly meeting to 19 September. Bert Stevens seconded. After brief discussion, the motion was called and carried by the members present.

2. Outreach Coordinator – Although Chuck Sterling's daughter, Melissa, has improved greatly, Chuck will probably be unavailable the rest of this year. Nils Allen asked for a volunteer to fill in for Chuck for the remaining four months of 2008. Bill Stein said he would take on those responsibilities. Rich Richins will alter the link from the web site.

   Rich is also working with Pam Egan, Las Cruces School District SCIAD coordinator, to get astronomy-related information out to the Las Cruces public schools via emailed AstroAlerts. So far, 182 teachers, administrators and school district employees have signed up to receive the information on star parties, moon gazes, eclipses, etc. A request for a 1st grade in class presentation has also been received for next week.

3. Fred Pilcher has spoken with Stephen Hussman, the NMSU Library Archives and Special Collections Department Head, regarding archiving the ASLC monthly newsletter. Fred presented a motion that a gratis hard copy of future newsletters be mailed to the library, attention Stephen Hussman. Rich Richins seconded the motion. Follow on discussion included the possibility of members going through their "personal" archives and providing back issues not stored electronically on the Club website to be archived at the library. The motion was called and passed by the members present.

Announcements:

1. White Sands Star Party - WSSP will not be held in the traditional Area 19 but rather in the West Film Area of the dunes. There will also be the Comet Hale-Bopp Star Party on 25 September (Thursday) in Cloudcroft. The New Mexico Museum of Space History hopes to raise $5000 via the Hale-Bopp event. Speakers for the overall event may include Steve Landeene, Spaceport USA director, and Howard Brewington, comet hunter and Apache Point Observatory astronomer. The prize drawing will include a 4" Celestron telescope and a Sloan Digital Sky Survey plug plate.

2. Equipment – Kirby Benson has a new Williams FLT 110mm. Bobby Franzoy has a '97 Coleman pop-up camper for sale; asking $3000. Frank Miller suggested the possibility of a Club auction of equipment that members are interested in disposing of.

3. IYA 2009 NM Planning meeting – A planning meeting for state-wide and regional events for next year's IYA will be held 28 September at the NRAO facility in Socorro, NM. Contact Nils Allen if you can/ would like to participate.

4. Astronomical League (AL) Outreach Award – Club members need to fill out the Excel spreadsheet and submit them as soon as possible.

5. Sad News –

   The inventory of Philip Herron's equipment is not complete. The Club may host an astronomy yard sale. More information will be posted via the ASLC Yahoo group.

   Club member Chuck Sterling's daughter Melissa was diagnosed with AML, a form of leukemia. She has made remarkable progress to date. He will update members on her status via the Yahoo group.

   Club member Marion Seibyl passed away the first of the month. A memorial service was held in Las Cruces. Walt Seibyl was present at tonight's meeting. The Club extends its collective condolences to Walt.

   Members Bert Stevens and Dave Dixon have both been in the hospital recently. Both are now home.

6. *Astro Technology Today* – A Club member (Kirby Benson) has an article in the latest issue. Check it out.

7. El Dorado Star Party – Steve Barkes asked if anyone had attended or was familiar with this event. No one present was.

8. Beginning Astronomy class – Rich Richins announced that a new class beginning in late September has been proposed, to be held Tuesdays in the Library at UUCLC on Solano.

9. MoonGaze - A monthly MoonGaze was held 09 August at International Delights Café on El Paseo. The September MoonGaze will be 06 September.

Observations:

Bert Stevens reported he was out for the first time in 20 nights.

Steve Barkes offered a motion to adjourn and Bob Long seconded. The business portion of the meeting was adjourned at 8:15 pm by acclamation of those present.

Presentation:

This month's program was presented by Dr. Paul Mason, an astronomer and faculty member at DACC and UTEP. His topic was "Black Holes, Neutron Stars, and White Dwarfs in Binary Star Systems." Dr. Mason presented observations obtained at McDonald Observatory and the Very Large Array concerning mass transfer onto compact stars. This presentation was not recorded for rebroadcast. Other meeting presentations can be accessed on the web at **http://www.aicsresearch.com/lectures/aslcnm/.**

The August 2008 monthly meeting concluded at 9:05 pm.

-Respectfully submitted by John McCullough, ASLC Secretary

Astro Magazines Available

Long-time ASLC member Larry Lindsay has notified Janet Stevens of the following information:

Janet,
I had to clean out a closet to make room for some more "junk" and I have a bunch of old magazines I'm going to have to find a new home for. They are issues probably from the late 1960's through around 2006. The are almost a complete set of Sky & Telescope, a lot of Astronomy, some Reflector, a complete set of Telescope Making (the magazine), and probably others. There are eight Xerox copy paper boxes full, probably weigh 300 to 400 lbs. but I have a dolly available. I live north of town just off Taylor Road so have anyone interested call me for directions. If you could use them for any ASLC purpose, or if any member would like to have them, they are free. If any one is interested, have them either call me at 575-526-4136 or email to lglindsey@comcast.net
Thanks,
Larry Lindsey

White Sands Star Party #9 (WSSP IX) – What's it all about?

by Nils Allen

The ninth get-together of local (and some not-so-local) astronomers & families called the White Sands Star Party is just about a week away. Our Society has a long history of being well represented, but this year we're more involved than ever. Below I will enumerate all the info worth knowing for this event, including some not generally known.

Purpose: The Party's stated purpose is to raise funds for ProjectAstro New Mexico, a very worthwhile educational outreach to local schools founded by the ASP. In reality, though, mixing with & observing with other astronomers has major appeal – sharing views, stories & learning from each other is great fun.

Pleasing: Getting to stay day & night in the WSNM dunes is also always enjoyable, especially for families. I have thoroughly enjoyed finishing a long night of observing by settling down next to my big Dob and falling to sleep with the celestial panorama reeling just above my eyelids. Many ASLC-ers really like sharing their passion for astronomy with the general public, which flocks around our scopes from 9 to 11 on Saturday night. We all enjoy using the free passes to take in an IMAX movie and/or tour the museum at the Space History Museum in Alamogordo.

Presentations: the ASLC-run mini-workshops are a great way to learn something new on specific short topics. Lots of variety means something for everyone, from beginners to the old pros. Check out the schedule….

Time	Topic	Speaker
11am-11:30 —	How the Stars Got their Names	Phil Simpson
11:30-12:00 —	Deprived of Darkness - You can help preserve our dark skies	Carol Rehder
12:00-12:30 —	Comet Chasing: got scope? Have Fun!	Greg Crinklaw
12:30-1:00 —	Your First Telescope (or your youngster's) - Build It!	Nils Allen
1:00-1:30 —	Break / Catch-up time	
1:30-2:00 —	Planetary Astronomy - The Latest New Discoveries	Fred Pilcher
2:00-2:30 —	Photometry - Doing Real Science	Fred Pilcher
2:30-3:00 —	Adaptive Optics in Amateur Astronomy?	Jerry Gaber
3:00-3:30 —	Astro-Image Processing - Selective Sharpening & Noise Reduction	Dave Dockery
3:30-4:00 —	Imaging with HyperStar: Now Widefield!	Rich Richins

Our VP Jerry Gaber & I will be moderators for these sessions, which are held Saturday in the Monument Visitors' Center main meeting room (west side of the compound).

Speakers: The speakers planned for this year will be Howard Brewington on Friday and Steve Landeene on Saturday. Howard is an ace comet discoverer and all-round talented astronomer and telescope-operator up at Apache Point Observatory. As the Executive Director for the New Mexico Spaceport Authority (NMSA), Steve is heading up development efforts for Spaceport America, and will share about the connections between space & astronomy in our local area. These guys are well worth listening to!

Prizes: We all enjoy the free pizza party, but the real attraction here that gathers all the attendees is the prize drawing afterwards. No, Naglers are not offered, but there are over 30 pretty nice items up for grabs, to include:

Grand Prize - Celestron NexStar 102 Go-To refractor (f/6.5), with 12V B&D Power Tank

SkyTools software, WSSP tee-shirts

Coffee-table astronomy books, an astro-blanket & special earrings too!

For the Kids – various books, fun USB toys, educational items, "Gold Metals"

And last but not least - an AL plug plate used for the Sloan Digital Sky Survey…own a piece of history!

NEW STUFF!

1) A new area to camp in! It's bigger & better, I hear…where various movies have been filmed….

2) Access to operate a remote-imaging telescope in Australia on Sat. morning (from the Space Museum)

3) An enjoyable "WSSP Observing List," a la TSP, to thrill and disgust serious observers.

4) the Comet Hale-Bopp Star Party, an add-on occurring just prior to WSSP. I plan to take my big Dob up there and check out this new venue – should be interesting. See news release below….

Comet Hale-Bopp Night

A new addition to this year's activities is the Comet Hale-Bopp Night, held on Thursday, September 25 near Cloudcroft in the Sacramento Mountains. The event offers participating astronomers, their families, and the public spectacular viewing at nearly 9,000 feet ASL. Alan Hale, co-discoverer of Comet Hale-Bopp, is the evening's featured guest. This observing event is at the high school football field, off NM 130, just a few miles south of the Village. Parking is just outside the field, and telescopes can be moved onto the field.

While the public is invited to view through telescopes and other viewing equipment which will be provided by local astronomers, the field closes at 11:30 to the public. Astronomers can then engage in serious viewing throughout the night. Come join us in Cloudcroft. Viewing in the Sacramento Mountains is a unique experience. Our telescopes will help provide you with a breathtaking view of the night sky.

In summary, I want to encourage all ya'll to participate in this year's activities – it's a great way to connect with other area astronomers and learn something new. If you're short on time you can come out to the Monument on Saturday evening for the speaker & public observing session, and/or run up to Cloudcroft on Thurs to check out the high-altitude observing event – bring a scope or look through mine! Makes a good way to show your family & friends what a 'real' star party is like! More info can be found at **www.zianet.com/WSSP**

How Astronomy Changed My Life, and Millions of Other Species as Well

By Wirt Atmar

Life in an Eden may not be all that it's been imagined to be.

In fact, there may not be much life at all, or at least not much complex life. Darwinian evolutionary theory is composed of two processes: variation and selection. It's only through the constant repetition of these two attributes that all complex life on a planetary surface is evolves.

It may be surprising then to learn that vigorous ecological competition brings evolutionary progress to a halt. When competition is intense and every niche is filled, each species must be optimized for whatever task it's carved out for itself. But the downside is that no species has any room to experiment. Individuals of the species who can't admirably perform their tasks simply don't survive in the midst of such fierce competition.

In this circumstance, evolution on a stable world slows to a halt. It's only during those periods when competitive pressures are released, generally following an environmental catastrophe, that evolution is allowed to explore a variety of new biotypes and evolution once again "advances." The general rule is: "No vacancy, no evolution."

Unfortunately, we know of no better way to create large-scale vacancies than to whack the planet every so often with massive asteroids. These impacts represent the deaths of million of species and trillions of individuals. But they also allow evolution to begin again, but it doesn't start from scratch. Rather it builds its new species from the genetics of the species that survived, thus the episodic catastrophes have a strong tendency to act as "complexity pumps."

With the impact at Chicxulub,the course of life on Earth changed in an instant.
Painting by Don Davis, Courtesy of NASA.

Perhaps even more interesting is the thought that the groups of animals that evolve to fill the now empty niches are more intelligent than those that preceded them.

Andrew Knoll, a paleontologist at Harvard, has asked, "What does paleontology contribute to evolutionary biology?"

One answer he gives is that paleontology obviously provides a direct historical record of evolution, one that includes organisms such as trilobites and dinosaurs, organisms whose existence would not easily be inferred on the basis of studying modern animals alone. But Knoll argues that paleontology does more than that. What it truly does is to inform us about the nature of evolution on an active planetary surface.

Beginning in the 1970s, a number of paleontologists began to challenge the notion that the populational genetic processes of standard evolutionary biology are sufficient to completely explain the evolution of life on earth, an idea most clearly spelled out by their dictum, "*Macroevolution is decoupled from microevolution*."

The iridium layer in the Italian Appenines, marked with an Italian coin. The layers of rock below the coin belong to the Mesozoic ("middle life"). The layers above are of the Cenozoic ("recent life").

Evolution is not a process that operates only through time; there exists a profound spatial component as well. As species increasingly better learn their environments, they simultaneously become bound to those environments. Species diversification, the evolution of complexity and the evolution of intelligence are all similar questions interwoven onto a biogeographic tapestry, governed greatly by a planet's obliquity, eccentricity, internal heat and position in its solar system.

Evolutionary ecology has been slow to recognize the importance of these geographical and astronomical constraints on the evolution of life on Earth, but the last two decades have seen a fundamental shift in that regard. Perhaps the most significant event in turning people's opinion was Walter Alvarez's discovery of an iridium layer in the Umbrian mountains of Italy, exactly synchronous with the disappearance of the dinosaurs.

The initial resistance to the asteroidal extinction hypothesis being the cause of a worldwide extinction was intense and immediate from the very beginning. The first public presentation of Walter Alvarez's thesis of the K/T boundary being caused by an asteroidal impact was at the American Association for the Advancement of Science Meeting in Washinton, DC in 1982. By chance, I happened to be there. I was in the audience, in the mezzanine of the auditorium at the Hilton where the meeting took place.

When Walter gave his talk, the front row of seats directly under the stage was populated by a row of very well known paleontologists. When Walter finished speaking, that row simply erupted, almost to the point of rioting. The reason for the reaction was that biology and geology had been fighting for 150 years against the Catastrophism associated with Biblical literalism. The philosophy that underpins modern geology is Uniformitarianism, the idea that the natural processes operating in the past are the same as those operating today, but here was a direct assault to that presumption.

Alvarez politely listened to what they all had to say, and when they had finished, he said, "Look guys. It's only an hypothesis, but here's what the data say," and he repeated the data again.

I was very impressed by how he conducted himself.

At the time of his talk, Walter only had the data that he had personally gathered in the Umbrian Apennines, along with the new data gathered by geophysicist friends at Los Alamos National Labs in the Raton Basin. The Los Alamos geophysicists found the same iridium anomaly layer in New Mexico, and this was unmistakable evidence that the iridium layer was a marker of a global catastrophe. It was only few years later that the large Chicxulub crater was discovered under the waters off Yucatan by a PEMEX oil exploration team, providing convincing evidence that the hypothesis was accurate.

Since then, the notion that impacts have been changing the course of life on this planet has moved from realm of wild speculation to the hypothesis most often invoked first to explain the major transitions in the composition of life on this planet.

Although the fossil record indicates that a number of catastrophic extinctions have occurred over the past 600 million years, the two large mass extinctions occur at the Permian-Triassic (P/T) and Cretaceous-Tertiary (K/T) boundaries, 250 and 65 million years ago. These boundaries represent such significant transitions in the history of life on this planet that they divide the fossil history into three distinct eras: the Paleozoic ("ancient life"), the Mesozoic ("middle life") and the Cenozoic ("recent life").

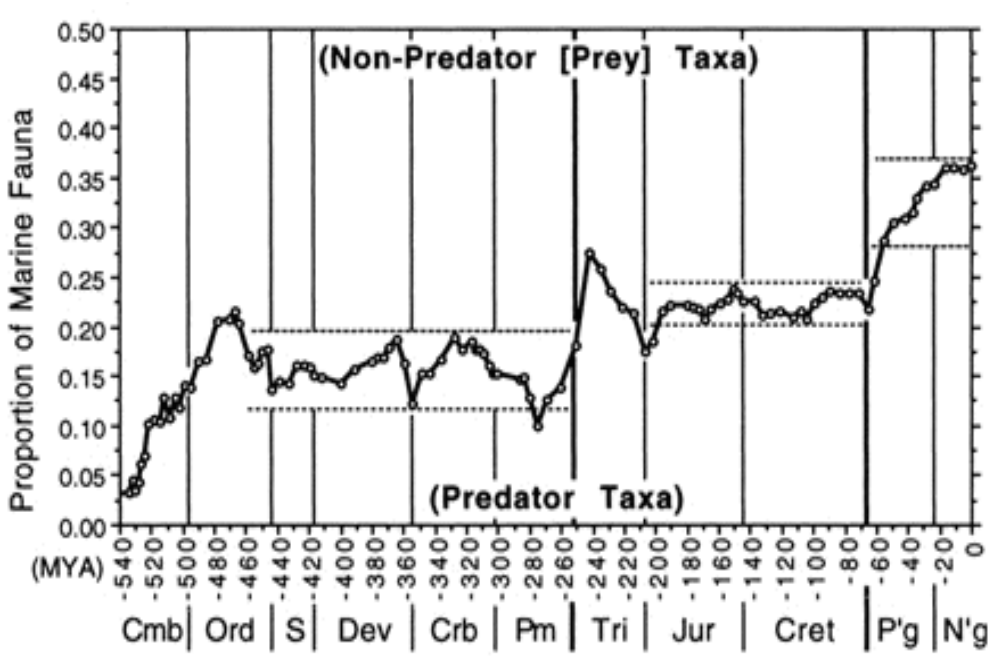
The tiny mammal Hadrocodium from the early Jurassic (200 million years ago.) Hadrocodium'a skul demonstrares that it is very advanced for it's early age. *Illustration by Mark A. Klinger, Carnegie*

An asteroidal impact has been positively associated with the K/T boundary, but the P/T boundary is much less certain. Nonetheless, an impact is a leading contender for its explanation as well.

It often surprises people to discover that mammals are older than the dinosaurs. The dinosaurs arose following the P/T extinction event and disappeared with the K/T impact. But for all of those intervening 190 million years and before, tiny protomammals darted beneath the feet of the dinosaurs. When the dinosaurs disappeared in an instant, the world was left open for the mammals to fill.

In a very real way, the meek did inherit a new Earth, went forth, were fruitful and multiplied. But even more relevant to our story, the mammals experienced the very rapid evolution that is associated with all organisms as they undergo adaptive radiations into novel adaptive zones. Every bit of evidence suggests that these new mammals were more intelligent than those that preceded them.

Richard Baumbach and Andrew Knoll have recently performed a very interesting analysis using the late Jack Sepkowski's data. They classified marine invertebrates (clams and the like) by their most gross characteristics: whether they were mobile or sessile, predator or prey, and whether they were well-buffered from their environments. What they found was that both of the two primary catastrophes reset these characteristics in the surviving organisms. With each catastrophe, the survivors became more mobile, more disconnected from the vagaries of the environment, and more predaceous.



The ratio of predators to prey organisms seen in the fossil record. Following the two great catastrophes of the Permian-Triassic (Pm-Tri) and Cretaceous-Tertiary (Cret-P'g) boundaries, life advanced in a stepwise manner to become more predaceous, and thus presumably, more intelligent.

It's this last characteristic that is of special interest. Intelligence is a quality associated with predators. While Baumbach and Knoll's analysis only dealt with marine invertebrates, evidence suggests that the same pattern exists for the terrestrial species as well.

It thus may be no overstatement to say that our modern capacity to build computers and spaceships is a direct consequence of asteroidal fragments being repeatedly hurled at Earth, and without these "kicks in the pants," we wouldn't be we.

Next month: Looking for Life in All the Wrong Places

ASTRONOMICAL SOCIETY of Las Cruces
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ASLC - Sharing the Universe
With Our Community
for Over 50 Years