February PCAS Speaker

Dr. James P. Kennett

Evidence for the Younger Dryas Boundary (YDB) Cosmic Impact 12,800 Years Ago and Its Environmental, Biotic, and Human Consequences

The abrupt onset of the Younger Dryas cooling episode 12,800 years ago involved a complex and linked array of abrupt and enigmatic changes in the Earth’s environmental and biotic systems. Especially intriguing is the close and collective association of North American continental-scale ecological reorganization, megafaunal extinctions, and human adaptive shifts and population decline.

Various hypotheses have been proposed to account for these changes, including the Younger Dryas Boundary (YDB) Cosmic Impact Hypothesis. (Continued on p. 3)

Dinner with the Speaker

Please join this month’s speakers, Dr. James P. Kennett, for dinner before the February 12 meeting at 6 pm at Mimi’s Café, 4030 Barranca Parkway, Irvine.

Have you renewed your membership?
Use the membership form in this Newsletter.
JANUARY SPEAKER NOTES

Grooving in the Past: A demonstration of the manufacturing of OGR beads and a look at past SRS, Inc. replicative studies

By Megan Galway

Connie ‘Destiny’ Colocho and Andrew Garrison of SRS, Inc. presented a short discussion of the manufacture and distribution of OGR (Olivella grooved rectangle) beads before demonstrating how they replicate these beads. OGR beads have been dated to the middle Holocene through correlation with ceramic sequences and were widely traded into the Great Basin. At CA-LAN-43 (Encino Village site), SRS researchers found evidence of manufacture and later experimented with replication based on this evidence and the results of previous studies.

Suggestions that various methods were used to heat treat shells prior to processing were tested. These tests included placing the shell in hot ash or coals for periods of 1 to 10 minutes, boiling, or burying in hot sand for 2 to 9 hours. Shells were found to be destroyed by the hot ash treatment, and the sand bath was most effective. Bead blanks were made by either bipolar percussion using a hammerstone and anvil or by cutting the blank with an obsidian blade. The percussion method provided a number of blanks from each shell while blade cutting took 40–60 minutes and yielded only a single bead. The blanks were ground on sandstone to the final shape. After grooving the convex side of the bead with an obsidian blade, a hole was created in the highest point of the blank. The beads may have been polished after manufacture.

The team’s conclusions from these experiments are that heating is not particularly effective or necessary. Bipolar reduction produces multiple beads which can be created in 10 to 20 minutes per bead, and producing beads by cutting is not time or cost effective.

CORRECTION

January Newsletter Speaker Notes: The correct title of Dr. Brian Fagan’s December lecture was “The Intimate Bond: How Animals Changed History.” We apologize for the error.
Dr. Kennett will review and provide an update on the status of this hypothesis, summarizing evidence consistent with the impact of a comet cloud with Planet Earth resulting in widely distributed, multiple aerial bursts in the atmosphere. This cataclysmic event resulted in the deposition of a thin YDB layer containing peak abundances in a variable assemblage of cosmic impact-related material found at more than 30 sites. These materials include nanodiamonds, high temperature impact spherules, meltglass, and minerals and a peak in platinum. Radiocarbon analysis including the use of bayesian statistics demonstrates that this layer of 12,000 ± 150 years ago is synchronous within dating uncertainties across four continents, consistent with a single major cosmic event.

Dr. Kennett will also review other YDB evidence consistent with the impact hypothesis including widespread biomass burning, continental hydrographic reorganization (plumbing change and outburst floods), the late Pleistocene North American megafauna extinctions (mammoths, ground sloths, sabertooth cats, horses, camels, etc.), and human cultural change (disappearance of Clovis culture) and major human population decline across North America.

Dr. Kennett was born and raised in New Zealand. He earned his Ph.D. (1965) and D.Sc. (1976) from Victoria University of Wellington. He served as the Director of the Marine Science Institute at the University of California, Santa Barbara (1987–1997), and is presently Professor Emeritus and Research Professor at UCSB. His 50-year research career has ranged widely in the earth sciences: marine geology and paleoceanography; Cenozoic and Quaternary climate history; micropaleontology and marine biotic evolution; methane hydrates and climate change; and most recently, the YDB Cosmic Impact Hypothesis. His research was primarily focused on Cenozoic Earth System history using multiple analysis on the marine sediment record. The main purpose has been to better understand the development of the Earth System through time and processes involved in this dynamic evolution. Dr. Kennett has enjoyed the publishing, with multiple colleagues and students, of 264 articles in refereed journals and edited volumes; 4 books including *Marine Geology*; 16 edited volumes; 42 published reports; and more than 300 published abstracts.

**February Curation Workday**

**When:** February 14, 2015, 1 pm

**Where:** Red Car Building

Everyone is welcome. No experience necessary! Please contact [Mark Roeder](mailto:curator@pcas.org) or [Scott Findlay](mailto:fieldtrips@pcas.org) for directions and to let us know you will be coming.
David Belardes
1947–2014

By Stephen O’Neil

David Lee Belardes passed away on December 29, 2014, after an illness of several months.

David Belardes was Tribal Chairman of the Juaneño Band of Mission Indians, Acjachemen Nation, and he served on boards of the San Juan Capistrano Historical Society, California Mission Studies Association, Capistrano Indian Council, and Historical Commission of the City of San Juan Capistrano. Belardes was a leader in seeking federal recognition for his tribe. He promoted language revitalization, gathered John P. Harrington’s field notes and recordings about the Juaneño, secured the Alphonso Yorba Collection, engaged in site survey work, and monitored construction projects on sites containing Native cultural resources. He studied under Luiseño and other tribal elders, learning their songs and ceremonies. He shared this knowledge with fellow Juaneños so that they might continue local traditions. His greatest achievement, however, was how he lived his life, taking care of his family and his community.

Belardes grew up with the “old knowledge” of the Acjachemen and of San Juan Capistrano. On both his father’s and mother’s sides, his ancestry included Acjache- men from the villages of Putuide o Captivit (Putuidem and Acjachme) and Pangenga (Panhe). From the Hispanic frontier settlers he could claim Cota, Ávila, Lugo, Salgado, Castillo, Belardes, Reyna, Rios, and Yorba ancestry. His father, Mattias H. Belardes, a vaquero and rancher born in 1885, taught him about nineteenth century Native and Hispanic traditions. David’s mind retained it all: herbal remedies, meal preparation using what was collected on the beach, family genealogies and how they interconnected, and proper ceremonies when a family member died.

David married Cha Cha (Aurora) Paramo, whom he had known since kindergarten. He raised a family while working for the school district. They had two sons, Mattias and Domingo, and six grandchildren. But when the needs of the Juaneño community called him, David moved beyond his immediate family. He and cousin Raymond founded the Juaneño Band of Mission Indians to protect ancestral sites, seek federal recognition for the tribe, maintain and spread knowledge of the tribe’s traditions, and preserve certain historic properties within San Juan Capistrano. He was designated by the California Native American Heritage Commission as the tribe’s “Most Likely Descendant,” to be called whenever ancestral remains were uncovered. He cared deeply for the Juaneño people, most of whom he knew personally. Over the years he became a highly respected and successful leader dealing with the politics, ceremonies, and social needs of the tribe. In 1994, with the support of the elders, the Juaneño community invested Belardes with the role of chief.

Belardes directed a Juaneño/Acjachemen interpretive center at the Blas Aguilar Adobe. The adobe was built in 1794 for Mission Capistrano neophyte families, later occupied by his wife’s Aguilar great-grandparents in the 1850s, and now belonging to the city. Thanks to David’s efforts, this museum and its foundation recently received a preservation grant.
JANUARY BOARD MEETING SUMMARY

Submitted by Brian Steffensen

President Megan Galway called the meeting to order at 7:00 p.m. at the Old Courthouse in Santa Ana, California. Board members present: Rene Brac, Gail Cochlin, Scott Findlay, Jane Gotthold, Steve O’Neil, and Brian Steffensen. New Board members present: Stephen Dwyer and Hank Koerper. Member present: Bob Brace.

The Board approved the November 2014 minutes with corrections and the treasurer’s annual report for 2014.

Old Business

Scott Findlay purchased and set up a new shelf for the library, and the Board authorized the purchase of two more shelves.

New Business

Newly elected Board members Steve Dwyer, Hank Koerper, and Kathleen Shada were seated on the 2015 PCAS Board. Outgoing members, Linda Christison, Gail Cochlin, and Sherri Gust, were thanked for their service. The Board unanimously elected Megan Galway, president; Scott Findlay, vice president; Brian Steffensen, secretary; and Rene Brace, treasurer. All committee chairmanships will remain the same with the exception that Scott Findlay and Steve Dwyer will be co-chairs for field trips.

The Board approved a $250 presentation grant to Mikael Fauvelle, a Ph.D. candidate at UCSD, who will present a paper on Chumash cross-channel food trade at the SCA Meeting.

Joe Hodulik’s January Donation-Award table raised $193.20 for the scholarship fund! A February 20–23 field trip is planned to the lower elevation Anza Borrego/Salton Sea area. PCAS Quarterly 50(3&4) and 51(1) were prepared for mailing before the meeting.

The meeting was adjourned at 8:05 pm.

PCAS FIELD TRIP

February 20–23, 2015

Anza-Borrego/Salton Sea Area

For information or to sign up for this field trip, contact Scott Findlay (fieldtrips@pcas.org or 714-342-2534).
DIG THIS...

Lectures


Village Ecodynamics in the American Southwest, by Tim Kohler, Ph.D. (Washington State University), a lecture of the AIA, Orange County Chapter. DeNault Auditorium in Grimm Hall, Concordia University, February 22, 2 pm. Fee: $5; students and members free. Information: www.aia-oc.org.

Lectures (continued)


Classes, Meetings, and Events

The Art and Science of Flintknapping, by Dr. Jeanne Day Binning and Charles (Chuck) Bouscaren. California State University Desert Studies Center (ZZYZX), February 20–22. Fee includes lodging and meals: $325.00 (credit, 2 units) or $245.00 (non-credit). For questions, contact Dr. Billings, 559-301-7707. To enroll (UCR Extension): 800-442-4990 or www.extension.ucr.edu/enroll/catalog/olr_course_details.php?crid=15630.

Paddle and Anvil Pottery, by Tony Soares, a 2-day class of the Anza Borrego Foundation, February 28 and March 7, 9 am–4 pm. Fee: $160; members $150. Enrollment very limited. Information and to register: www.theabf.org/paddle-anvil-pottery.

The Archaeology of Asian Diasporic Settlements in California, a colloquium of the AIA, Riverside and Inland Southern California Chapter. UCR ARTSBlock, 3824 and 3834 Main St., Riverside, February 28, 2–4 pm. Information: aiariverside.ucr.edu.

Visit www.pcas.org for all the latest news.

Editor’s Note: Please confirm time and place of listing prior to the event. Submit items for Dig This to newsletter@pcas.org.
PCAS CODE OF ETHICS

The Pacific Coast Archaeological Society (PCAS) is a nonprofit group of professional and avocational people dedicated to proper management of our cultural resources, public education, and the protection and preservation of archaeological materials and collections.

The following principles have been adopted by the PCAS:

1. Professional methods and forms will be used on all archaeological field surveys, excavations, and laboratory sessions.
2. A complete record of field and laboratory work will be filed with the PCAS Curator and stored at a facility approved by the Society’s Board of Directors.
3. No archaeological materials will be removed without proper permits, landowner permission, and a field research design.
4. Unless otherwise legally stipulated before activity commences, all materials collected will be deposited for further research with the Curator at a facility approved by the Society's Board of Directors.
5. All generated reports will be the property of the Society and distributed as deemed appropriate.
6. All Society field activities will be performed only under the direction of a qualified field archaeologist (Principal Investigator) and the supervision of field or site directors.
7. The above principles will be observed on both Society approved projects and projects performed under the direction of an authorized institution or organization.
8. The Society and its members will strive to educate the public of the importance and proper management of our non-renewable cultural resources and to discourage the collection and commercial exploitation of archaeological materials.
9. PCAS members shall not benefit from the acquisition, purchase, sale, or trade of archaeological artifacts, materials, or specimens.
10. All members shall adhere to City, County, State, and Federal antiquities laws.

AMAZONSMILE

If you shop on Amazon.com, please consider shopping through AmazonSmile. AmazonSmile is simple and an automatic way to support PCAS every time you shop at Amazon, at no cost to you. Just choose PCAS as the recipient of your donation, and .5 percent of your eligible purchases will be donated to PCAS. Go to http://smile.amazon.com/ch/95-2685178 to get started or click below.

Shop at AmazonSmile and Amazon will make a donation to:
The Pacific Coast Archaeological Society

PCAS SPEAKER CALENDAR

March 12, 2015
Steve Freers

April 9, 2015
Dr. Charles Stanish
The Chincha Lines of Southern Peru

May 14, 2015
Dr. Aharon Sasson

June 11, 2015
George Kline
Archaeology of the Chuckwalla Valley
**2015 PCAS BOARD MEMBERS AND COMMITTEE CONTACTS**

<table>
<thead>
<tr>
<th>Office</th>
<th>Name</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>*President</td>
<td>Megan Galway</td>
<td><a href="mailto:president@pcas.org">president@pcas.org</a></td>
<td>714-539-6354</td>
</tr>
<tr>
<td>*Vice-President</td>
<td>Scott Findlay</td>
<td><a href="mailto:vicepresident@pcas.org">vicepresident@pcas.org</a></td>
<td>714-342-2534</td>
</tr>
<tr>
<td>*Secretary</td>
<td>Brian Steffensen</td>
<td><a href="mailto:secretary@pcas.org">secretary@pcas.org</a></td>
<td>714-348-9179</td>
</tr>
<tr>
<td>*Treasurer</td>
<td>Rene Brace</td>
<td><a href="mailto:treasurer@pcas.org">treasurer@pcas.org</a></td>
<td>714-544-6282</td>
</tr>
<tr>
<td>*Field Trips Co-Chair</td>
<td>Stephen Dwyer</td>
<td><a href="mailto:fieldtrips@pcas.org">fieldtrips@pcas.org</a></td>
<td>714-969-1911</td>
</tr>
<tr>
<td>*Historian/Librarian/Archivist</td>
<td>Jane Gothold</td>
<td><a href="mailto:librarian-archivist@pcas.org">librarian-archivist@pcas.org</a></td>
<td>562-947-6506</td>
</tr>
<tr>
<td>*Native American Liaison</td>
<td>Steve O’Neil</td>
<td><a href="mailto:nativeamericanliaison@pcas.org">nativeamericanliaison@pcas.org</a></td>
<td>949-677-2391</td>
</tr>
<tr>
<td>*Quarterly Editor</td>
<td>Hank Koerper</td>
<td><a href="mailto:publications@pcas.org">publications@pcas.org</a></td>
<td>714-633-9287</td>
</tr>
<tr>
<td>*Voting member</td>
<td>Kathleen Shada</td>
<td><a href="mailto:kathleenshada@pcas.org">kathleenshada@pcas.org</a></td>
<td>714-381-8182</td>
</tr>
<tr>
<td>Curator</td>
<td>Mark Roeder</td>
<td><a href="mailto:curator@pcas.org">curator@pcas.org</a></td>
<td>714-299-4150</td>
</tr>
<tr>
<td>Donation-Awards Coordinator</td>
<td>Joe Hodulik</td>
<td><a href="mailto:donation-awards@pcas.org">donation-awards@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>Field Trips</td>
<td>Scott Findlay</td>
<td><a href="mailto:fieldtrips@pcas.org">fieldtrips@pcas.org</a></td>
<td>714-342-2534</td>
</tr>
<tr>
<td>Historian/Librarian/Archivist</td>
<td>Jane Gothold</td>
<td><a href="mailto:librarian-archivist@pcas.org">librarian-archivist@pcas.org</a></td>
<td>562-947-6506</td>
</tr>
<tr>
<td>Membership</td>
<td>Megan Galway</td>
<td><a href="mailto:membership@pcas.org">membership@pcas.org</a></td>
<td>714-539-6354</td>
</tr>
<tr>
<td>Newsletter Editor</td>
<td>Sherri Gust</td>
<td><a href="mailto:newsletter@pcas.org">newsletter@pcas.org</a></td>
<td>714-245-0264</td>
</tr>
<tr>
<td>Programs Co-Chair</td>
<td>Joe Hodulik</td>
<td><a href="mailto:programs@pcas.org">programs@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>Programs Co-Chair</td>
<td>Brian Steffensen</td>
<td><a href="mailto:programs@pcas.org">programs@pcas.org</a></td>
<td>714-348-9179</td>
</tr>
<tr>
<td>Publicist</td>
<td>Joe Hodulik</td>
<td><a href="mailto:publicity@pcas.org">publicity@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>Refreshments</td>
<td>Gail Cochlin</td>
<td><a href="mailto:refreshments@pcas.org">refreshments@pcas.org</a></td>
<td>714-745-0815</td>
</tr>
<tr>
<td>Scholarship</td>
<td>Megan Galway</td>
<td><a href="mailto:scholarship@pcas.org">scholarship@pcas.org</a></td>
<td>714-539-6354</td>
</tr>
<tr>
<td>Website</td>
<td>Rene Brace</td>
<td><a href="mailto:info@pcas.org">info@pcas.org</a></td>
<td>714-544-6282</td>
</tr>
</tbody>
</table>

*PCAS Board Member

---

**PACIFIC COAST ARCHAEOLOGICAL SOCIETY**

2015 Calendar Year Membership and Subscription Form

Name(s): ____________________________________________

Address: ____________________________________________

City: __________________________ State: __________ Zip Code ______

Phone: ____________________________________________ Email: ________________

Newsletters will be sent by email unless a mailed copy is requested.

_I have read and agree to abide by the PCAS Code of Ethics_ ____________________________________________

**Membership** (Includes Quarterly/Newsletter)  **Subscription Only**  **Scholarship Fund**

- [ ] Active Member - $45  - [ ] Quarterly - $40  - [ ] Donation $________
- [ ] Family Membership - $50  - [ ] Newsletter - $20
- [ ] Supporting Member* - $55  - [ ] Student Associate - $10 (email Newsletter only)
- [ ] Donor Member* - $75
- [ ] Lifetime Member* - $1000

* May be individual or family membership

**Return form with payment to:**

PCAS Membership
PO Box 10926
Costa Mesa, CA 92627-0926

www.pcas.org