



Remembering Michael Jura

*Honoring Earth's biosphere:
walking-the-walk
&
Personal Tributes*



**ACADEMIC
PUBLISHING**

Physics 19

Energy in Modern Society: Now and in Future

Professor Jura

\$10.50

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Yes, I do recall our Fiat Lux effort: fun to do, well intended, but foolishly teaching peak oil for geological/economic reasons, when in fact it can now only happen in any reasonable time period for political reasons.

James McWilliams

The Tragedy of the Commons

Garrett Hardin (1968)

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"The Tragedy Of The Commons"
by Garrett Hardin

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Pgs. 1243-12

"The Tragedy of the Commons," Garrett Hardin, Science, 162(1968):1243-1248.

At the end of a thoughtful article on the future of nuclear war, J.B. Wiesner and H.F. York concluded that: "Both sides in the arms race are...confronted by the dilemma of steadily increasing military power and steadily decreasing national security. *It is our considered professional judgment that this dilemma has no technical solution.* If the great powers continue to look for solutions in the area of science and technology only, the result will be to worsen the situation." [1]

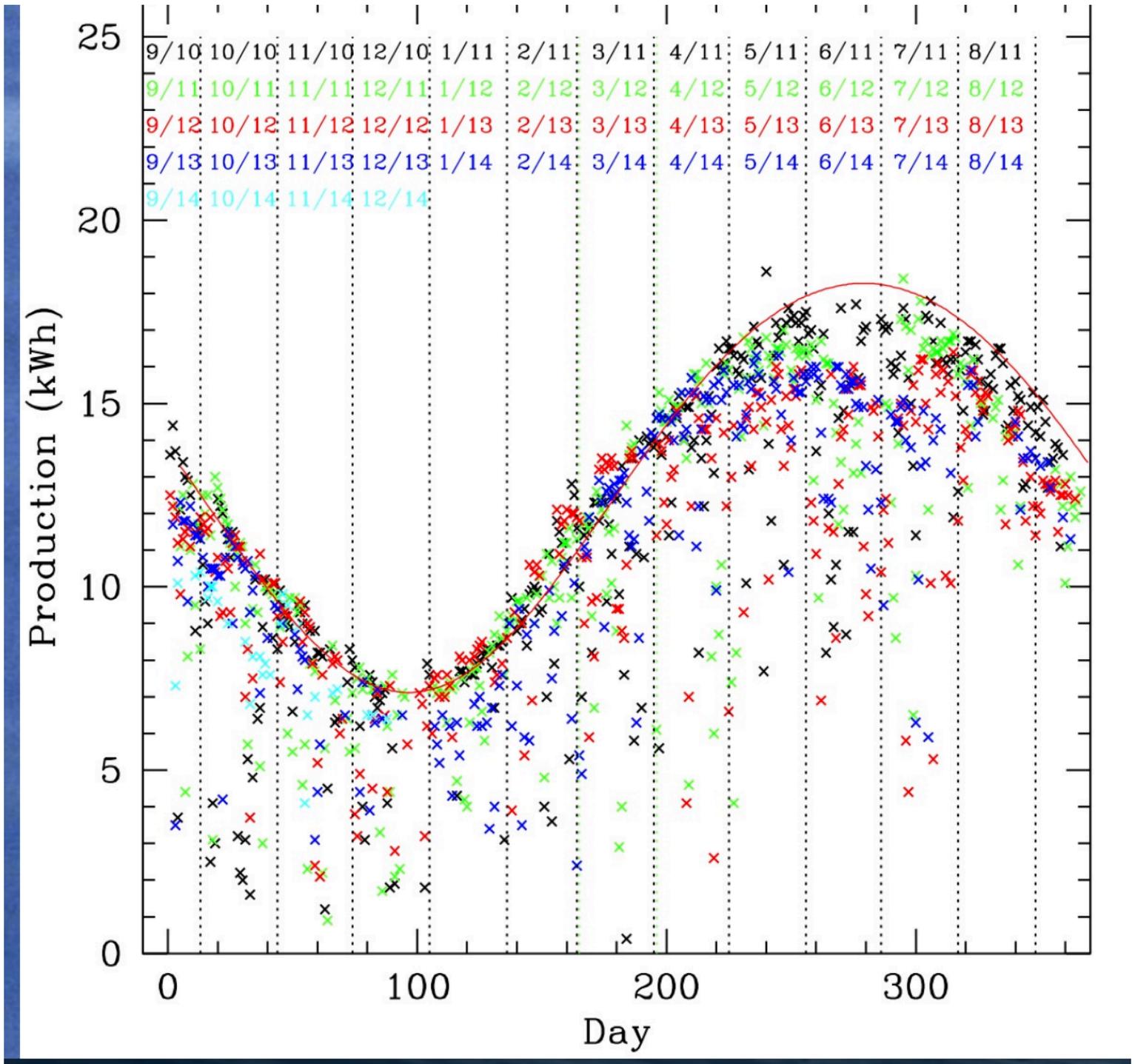
I would like to focus your attention not on the subject of the article (national security in a nuclear world) but on the kind of conclusion they reached, namely that there is no technical solution to the problem. An implicit and almost universal assumption of discussions published in professional and semipopular scientific journals is that the problem under discussion has a technical solution. A technical solution may be defined as one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality.

In our day (though not in earlier times) technical solutions are always welcome. Because of previous failures in prophecy, it takes courage to assert that a desired technical solution is not possible. Wiesner and York exhibited this courage; publishing in a science journal, they insisted that the solution to the problem was not to be found in the natural sciences. They cautiously qualified their statement with the phrase, "It is our considered professional judgment...." Whether they were right or not is not the concern of the present article. Rather, the concern here is with the important concept of a class of human problems which can be called "no technical solution problems," and more specifically, with the identification and discussion of one of these.

“Energy in Modern Economy”

Physics M155

Taught twice by Mike along with Prof. Matt Kahn of the Economics Dept.



LTE Harvard Magazine Nov-Dec 2011

Embracing the future, my wife and I decided to install solar panels on the roof of our three-bedroom house in West Los Angeles. Our successful self-experiment may be instructive to those with an interest in energy and energy policy (see "[Time to Electrify](#)," July-August, page 36).

We were paying annually about \$500 for 4,000 kilowatt hours (kWh), typical residential usage in California for a two-person household. But there was a lot of waste: for example, we left the two cable TV boxes on all the time. Since our son has graduated college and is on his own, we shut off the box in his room and, with no loss of comfort and a tiny effort—we still operate a large-screen TV, two laptops, and various appliances and gadgets—we've reduced our usage to about 2,700 kWh a year.

Thinking that we would want to operate an electric car, we chose a system that provides about 4,000 kWh/year. This required about 20 square meters of panels—about one-eighth of the total area of our roof. The contractor who installed the panel negotiated with the Los Angeles department of water and power which then directly paid him about \$7,000 of the total cost of nearly \$17,500. Because of the 30 percent federal income tax credit, our final out-of-pocket cost was slightly more than \$7,000.

We are getting a return on our investment that is hedged against inflation and vastly superior to the interest we would get by putting the money in the bank. Installing the panels was a sensible financial diversification. Our house was built in 1928 and requires upkeep. The cost of the panels was about the average amount we spend per year on maintenance and upgrades.

We are of course happy to get the tax credit for the installation of panels. For comparison, the \$1,000 a year I pay for a parking permit at UCLA is not subject to federal income tax. Consequently, I receive a tax subsidy of somewhat more than \$300/year for parking. In 25 years, the expected lifetime of the panels, the extrapolated tax subsidy for my UCLA parking permit will be much larger than for my solar panels and, in fact, be comparable to the subsidy I received from the department of water and power.

My wife felt very strongly that the panels should not be visible from the street, and therefore they were probably not quite as tilted as required to fully optimize their production over the course of a year. Domestic tranquility was assured at the cost of a few hundred kWh/year.

When we replace our 17-year-old energy-gobbling refrigerator, we will be closer to using 2,000 kWh/year. But even now, our panels provide enough energy both for home and for our electric car; the end of gasoline and electricity bills for a lifetime. This home experiment suggests that transition to a sustainable, modern economy is within technical and financial reach. It is most pleasing to have an inexhaustible supply of energy from the sun.

Michael Jura, Ph.D. '71

Professor, department of physics and astronomy, University of California, Los Angeles

Editor's note: [View the solar installation and a graph of Jura household energy use.](#)

Chevy Bolt EV

After talking about “more than 200 miles” for over a year, GM has announced the expected EPA-rated range of its upcoming all-electric Chevy Bolt EV -- 238 miles.

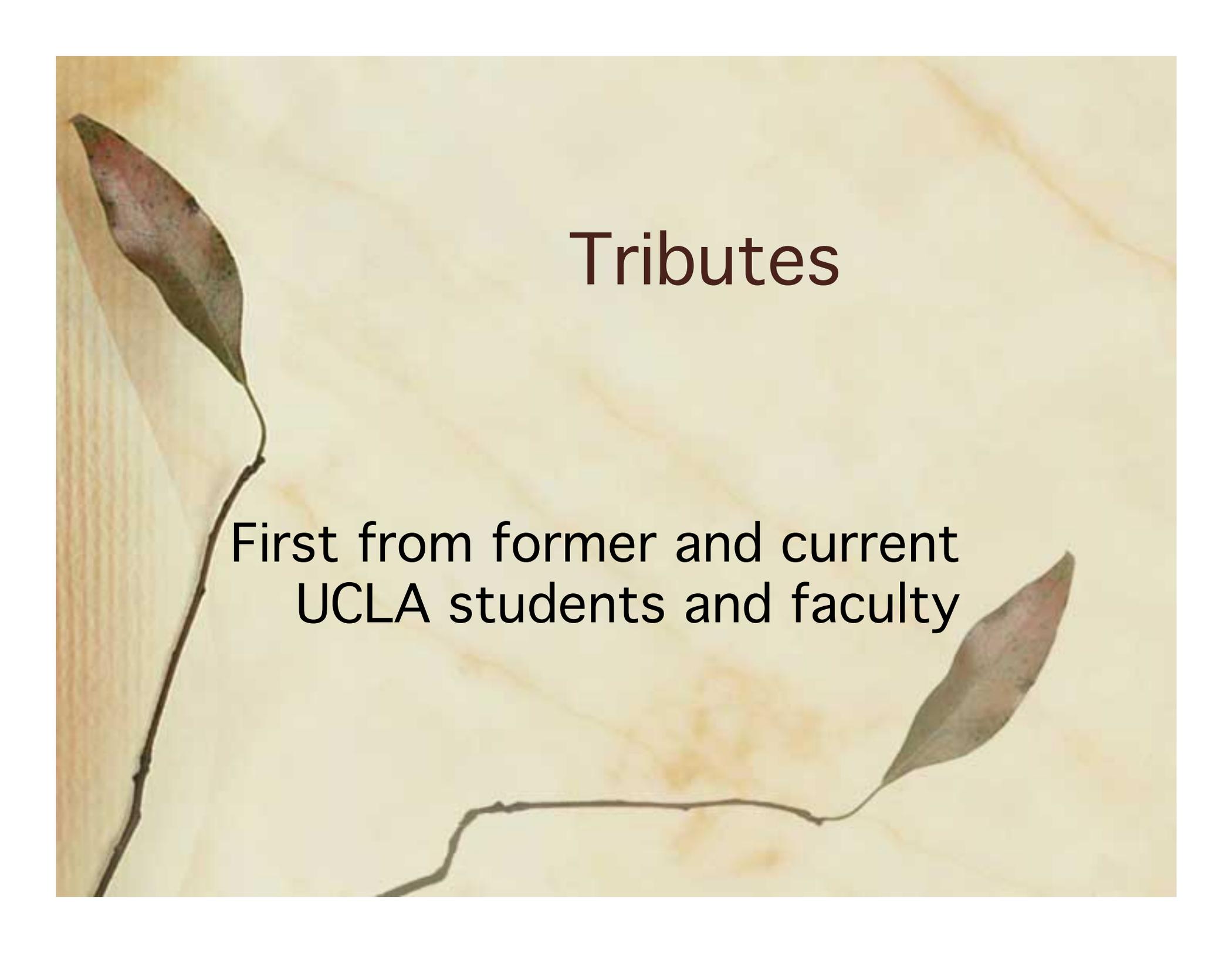
The cost, after Federal & California rebates, will probably be around \$27,000

Hi Alice,

Thank you for organizing this. I don't know if there is anywhere formal to share kind thoughts, so I'm writing them here just in case any are shared at the symposium.

I didn't know Mike well, but he was a faculty member who happily met with me when I was visiting UCLA as our prospective future home. **He was very encouraging about improving physics education and integrating sustainability and climate change topics into physics and other courses.** I also enjoyed regularly seeing Mike on his long walk into or out of campus, having that serve as a **reminder of his dedication to the environment.** He thus became such a friendly face in the Physics & Astronomy department, and one that I miss.

Best, Shanna Shaked



Tributes

First from former and current
UCLA students and faculty

In addition to being a brilliant astronomer with major contributions in both theoretical and observational astronomy, it is impossible to overstate how important Mike has been to our department and to astronomy as a whole. He played a major role in recruiting virtually all of our current faculty and in setting our priorities. He was especially influential in creating the strong focus on infrared astronomy and the creation of the infrared laboratory. Words can not describe how much he will be missed.

James Larkin (Vice Chair for Astronomy)

I was also deeply shocked at Mike's passing. I am so grateful that he was part of my life and so sad that we'll never be able to talk to him again. I'm trying to write down as many anecdotes Mike as I can remember. It would be great if one day we could all share our memories with one another.

Christine Chen

I found out today that one of my committee members passed away over the weekend. Mike Jura was a brilliant astronomer whose research into polluted white dwarfs revealed information about extrasolar planets impossible to detect by any other means. More than that, he was a kind man who cared about the students he worked with and all those he didn't.

My heart goes out to his friends and family— the world is a worse place without him.

Shane Frewen

Couldn't believe my eyes when I saw this... Mike is a great person and a really helpful instructor indeed. He is always enthusiastic about his research, considerate of his students, and...hale and hearty in my memory. Sorry for not being an as diligent researcher as you would encourage me to when we worked together. RIP my professor! You will be deeply missed!

Guochao Sun

Mike Jura is also my thesis advisor. He is an amazing scientist and a great friend to me. Likewise, he is the reason I went to UCLA for graduate school and the inspiration that keeps me going. Words cannot express my feelings. He will be greatly missed.

Siyi Xu

Dear Ben,

Thanks for passing along this terribly sad news. I feel so fortunate to have had Mike on my PhD committee and then to have the chance to chat with him about science whenever I came back to visit or when we'd show up at the same meeting. It's tough to learn I won't get to see him again. Most of all I'm sorry for your loss, which I'm sure is very tough personally and professionally.

Joel Kastner

Dear Ben,

I am so sorry to learn of Mike's passing over the weekend. **It's extremely disheartening to think that such an intelligent, caring and wonderful person could disappear so quickly**, even as we were just discussing his well-being during lunch on Friday. I know you two were close friends and colleagues and that this must be particularly difficult for you. If you need someone to talk to, I am always happy to listen. **What a great loss to our community and to the people who's lives he touched. He will truly be missed.**

Warmest Regards, Ivy Curren

Dear Ben,

I'm am very sorry to learn of Mike's death—I was unaware until I received notice of the symposium. **I of course remember him as a very young and caring professor. His class on the cold ISM was one of the best I took in graduate school.**

I wonder how many will remember that Mike sometimes came out to pitch for our graduate student softball team, the “Cataclysmic Variables” (the name, we thought, aptly described our play, which was known for occasional moments of brilliance interspersed with long periods of quiescence).

He will be sorely missed.

Phil Sakimoto

Dear Ben,

Oh no. Tears.

How can this be?

Mike was my mentor during my years at UCLA. I was his first student. He was such a brilliant, creative, and inspirational mentor, and such a wonderful, warm human being.

I can't bear the notion that we won't see him again.

Geoff Marcy

Ben,

I heard just yesterday about Mike Jura passing away. I didn't know about his health conditions, so this certainly came as a shock. I know he was a close friend of yours, so I hope you're doing OK.

I remembered he taught us one of the astronomy graduate courses and actually went back and found my notes (which I had scanned to PDF format) and looked over them. It was the Radiation course from the Winter quarter of 2007, so certainly one of the fundamental courses one should take in astronomy. **Mike was a great teacher so I'm glad I had a chance to take his classes and interact with him. I consider him as an integral part of my experience at UCLA. He will be sorely missed.**

David Rodriguez

He was such a wonderful teacher! Professor Jura was the professor for my first ever class at UCLA (Physics 17: Elements of Quantum Mechanics and Statistical Mechanics). As a new transfer student I was completely overwhelmed by all the physics classes I was taking, the quarter system (which was new for me), and an existential crisis about whether I wanted to pursue science at all. **Dr. Jura took the time to listen to me, give me advice about careers and grad school, and gave me strategies on how to approach physics problems** ("First principles!" he'd say). Even though that was the only class I had with him, every time I'd see him around campus, he'd always ask how school was going for me and was always happy to hear about my accomplishments. Now that I'm in grad school still pursuing science, I think back on those conversations I had with him early in my undergraduate career, and know I probably wouldn't be here if it hadn't been for his encouragement. I will miss him.

Raquel Nuno

Mike was one of the best professors I had at UCLA. I had him for at least three classes spanning undergrad and grad school, and I always felt at ease asking him questions, and he would enthusiastically answer them. When applying for grad school, he gave me great advice, and he was so nice and encouraging when I came back to UCLA. He gave me excellent career advice and got me into contact with some of his former grad students to talk them about careers outside of academia. **He was always so positive and so nice. He will truly be missed.**

Breann Sitarski

I was both shocked and very sorry to hear of Mike's passing; I was unaware of any illness.

I am sure this has had a profound effect on everyone he worked with closely. Just wanted to share my heartfelt condolences with all who had their connection through UCLA.

Jay Farihi

Dear Martha, Mike and Family,

Words cannot properly express my immense sympathy for your family in the tragic and devastating loss of your Husband/Father. As you know, he was **a brilliant, caring and amazing human being, and he will be remembered as that.**

Mike has always been a voice of authority, clarity, and inspiration.

Personally, I felt he was also like a father to me. It was Mike's encouragement that prompted me to return to work in science (which I would have not considered otherwise, after a 9 year break for family), and I likely would not have completed my Ph.D. were it not for his wise, caring, and reassuring ways. A decade and a half earlier, around 1989, when my (now) husband, Todd, and I first met Mike as the Prof of an undergraduate astronomy class at UCLA, **we felt then the power of his dynamic nature as an educator and scientist. He inspired all us students to care about understanding the Universe we live in and to take seriously the endeavor to really learn about it. He would stop us in the halls to ask how we were doing, and he always seemed to have some sage advice.**

Last night I went to help Ben and Siyi carry out the observing run that Mike had recently been awarded on the Keck Telescope. It was incredibly difficult to be there without him. I only hope that we can make him proud in carrying on, as best we can, the groundbreaking work he was leading the World with.

In walking through the halls, I was reminded that Mike obviously had a profound effect on many individuals.

Beth Klein

Hi Dr. Zuckerman,

I would like to extend my condolences for the loss of Dr. Mike Jura; he was a fabulous professor, from whom I learned so much! He was a fantastic person, and I know he was a great friend of yours, so I am very sorry for your loss. He will be very dearly missed. I hope you are doing as well as can be.

Best,
Kelly Kosmo

Thanks for forwarding. Mike was a pretty awesome guy and I learned a lot from him (and owe him for suggesting that I work with you and Eric and Ian.)

Bruce Macintosh

RIP to my PhD thesis advisor, Mike Jura

Mike, you will be missed, and your legacy in astronomy will not be forgotten. Maybe someday your remains will scatter in the atmosphere of the white dwarf star that will be left behind when our Sun dies.

Peter Plavchan

Hi Ben,

Thank you for forwarding this along. It seems that everyone had such positive connections to Mike. Even some undergraduate students who had him for a single class are commenting about it on Facebook. I remember when I was first looking into taking classes in the education department, I ended up talking with him about it (I can't remember why, now). **He was extremely understanding, and asked me questions about my career path I hadn't even thought about. He truly cared about each of his students, both graduate and undergraduate.** He was the only professor who met with each of the graduate students after we had a class with him to discuss ways we could improve. I was so surprised that he would take the time to do that for each of us. **He will truly be missed by everyone whose lives he touched.**

Laura Vican

Dear Francoise,

I heard randomly today from Jackie that Professor Jura died just over a month ago. This hit me pretty hard. He was my favorite professor. His Physics 17 class made me realize I could be a physicist. I'm even teary writing this email.

Please extend my deepest condolences to his family. Please tell them what a positive impact he had on my life.

David Nicholaeff

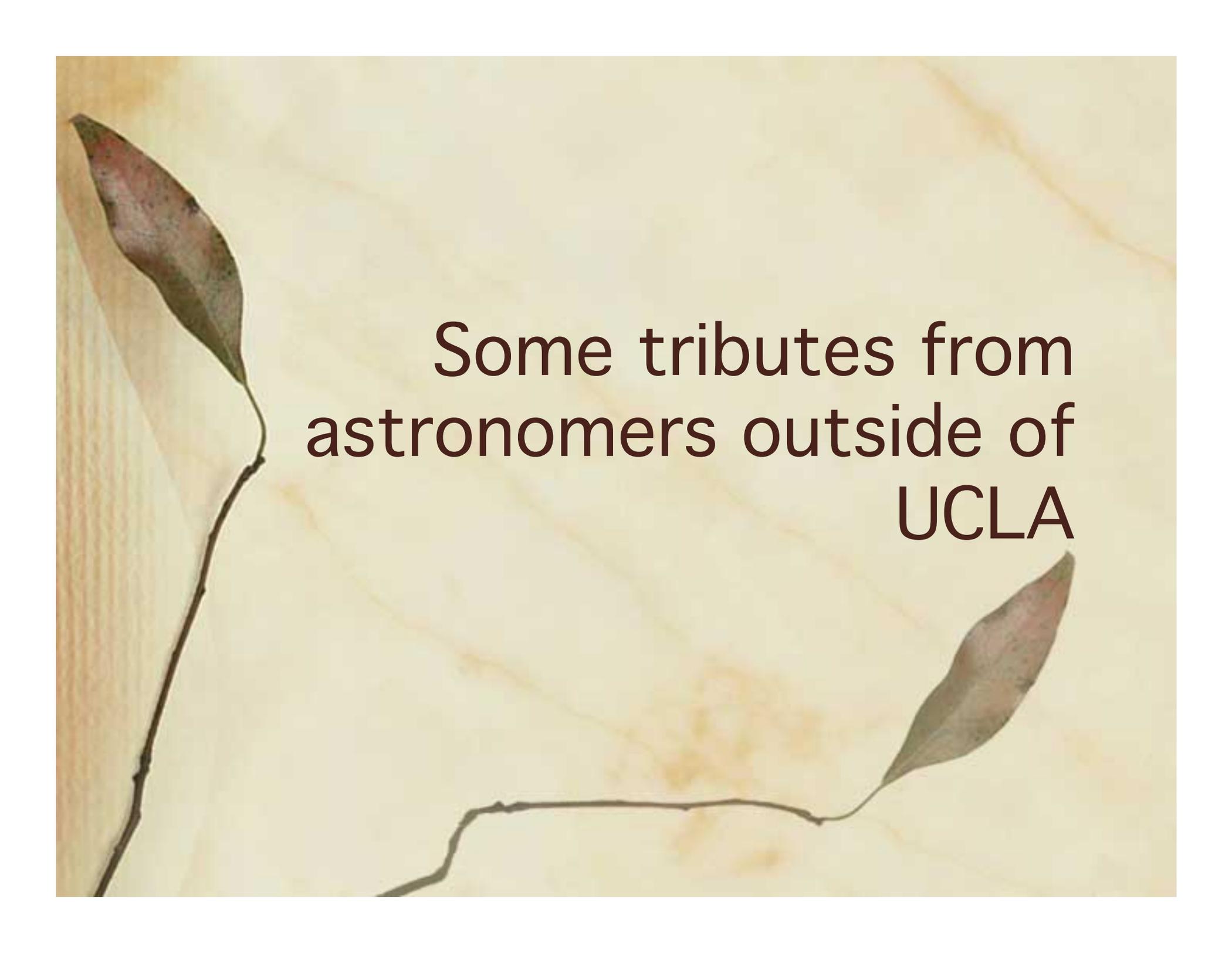
Dear Ben & Alice,

I will not be able to attend the memorial Symposium for Mike Jura. However I would like to pass along my condolences to the Department and to those who knew Mike well.

Mike was added, somewhat late, to my dissertation committee. His comments on my dissertation were extremely valuable, in particular his suggestions as to how to support the conclusions I was drawing via careful statistical analysis.

I am glad that Mike's memory will be honored at this symposium, and I wish you well for the event.

Sincerely,
Chris McCarthy,

The image features a background of aged, yellowish paper with faint, natural patterns. A pressed leaf, showing its stem and a single leaflet, is visible on the left side. The text "Some tributes from astronomers outside of UCLA" is centered on the page in a dark brown, serif font.

Some tributes from
astronomers outside of
UCLA

Thoughts on Mike Jura and GHRS

3/14/16

Kenneth G. Carpenter, Sally Heap, Jack Brandt, and Dennis Ebbets,

for the GHRS Investigation Definition Team
(IDT)

Mike was one of the original GHRS Co-I's and was seen as an excellent Team member by all. When he had something to do for the GHRS Team, it was done well and on time. He tended to be somewhat on the reserved side, but spoke up when appropriate and got things done. His biggest contribution to GHRS may have been at the very beginning. When we were putting together the science team for GHRS, we chose 2 people in each field where GHRS might contribute. For the ISM, we chose Mike and Blair Savage. They sent in a chapter that was wonderful. We never made even a one-word change to it, and we put it as the first chapter of the proposal because we knew it would have an impact. In fact, the ISM science ended up being one of the major justifications for selecting GHRS over other possible science instruments. We also remember him being a proponent for a fairly high signal-to-noise performance requirement for GHRS, related to his desire to measure weak interstellar lines.

Finally, he gave us a story for the ages by arranging a Team dinner one evening during a pre-launch IDT Meeting at UCLA. He gave us good directions and then calmly proceeded home to handle a conflicting appointment at home - or so he told us. :) The restaurant turned out to be very nice indeed - one with "nouvelle cuisine" at its heart, with every dish presented with the ultimate artistic flourish and perhaps a teaspoonful of actual food. We were served food for perhaps 4 hours, one tiny but artistic dish after another and, at the end, we were all still hungry. When we complained the next day about the lack of nourishment, he'd had none of it, insisting that "we" had had the best meal of any Team meeting... We've enjoyed telling this story over the years, far more than the event itself, and we do have to admit it was a unique experience and thus look fondly back at it in the here and now.

Dear Alice & Ben -

I'm sorry to have to miss this -- he was a great guy! Will just about to return from IAUS324 in Ljubjana, Slovenia.

All the best,
Virginia Trimble

I was also sorry to hear of Mike Jura's passing. I did not know him well personally, but I loved his papers and his papers were necessary reading for a grad student interested in debris disks. I enjoy writing single-author papers (and have almost completely lost the time to do so while advising grads and undergrads and everything else taking up time at UR) and Mike's were some of the best single-author papers on stellar topics that I always found educational and easy to read. The astronomy community could use more Mike Juras.

Eric Mamajek

I have fond memories of working with Mike, and as my first (and only) post-doc supervisor, he showed me a different approach to doing research from what I had seen before. He definitely was an inspiration to me, and a very nice guy on top of that.

Ciska Kemper

Hi Ben - of course I knew and liked Mike very much! He was one of the best TAC members I ever had. Smart, fair, thoughtful.

best, Mike Bolte

Dear Ben,

I am so upset by the news of Mike's death. I cannot believe it! We had exchanged emails only two months ago. Please, pass to all friends of the Department how much I share your grief.

Warmly in in such so sad a context

Alain Omont

Dear Ben,

This is devastating, and I am deeply saddened by the loss of Mike.

He has been absolutely inspirational to many of us here in Warwick, and we will sorely miss him.

Boris Gaensicke

Dear Ben & Alice,

I'm sorry I won't be able to attend the memorial symposium for Mike Jura next week. So instead I'm writing today to send my testimonial for Mike to you.

Since I first met him at a Spitzer workshop in 2007 in Pasadena he meant a lot to me intellectually and professionally. Right away we started talking about dusty white dwarf spectra and what they could mean. It was clear to me that Mike was looking at the problem with an open, curious mind, and applying what we knew about solar system materials to the question. We were able to talk over the subject in great detail, not only because of a good meeting of the minds but also because of **the intellectual curiosity, honesty and humor I sensed in him.**

Mike also made a very large impact as a teacher. I have come to know a number of Mike's students, and work with them, much to my improvement and profit. Just a few minutes with any of them and it becomes clear how well he inspired them, taught them astronomy, and showed them how to do robust research. I've learned much of what I know about debris disks through these interactions, so in a way, he taught me too.

News of Mike's passing earlier this year came as quite a shock. It came too soon, and **we have lost a great colleague and teacher and thinker. He will be sorely missed.**

Carey Lisse

Ben – I just heard about Mike.
I am so sorry....really sad to hear
of this. I admired him as a
scientist.

lynne hillenbrand

Dear Ben, I unfortunately never had the pleasure of meeting Mike Jura personally, although I am of course familiar with his work, in particular his work on dusty white dwarfs. I know that my colleague Yanqin Wu in Toronto held him in high regard, which is significant to me, since she in general is critically minded.

Alexis Brandeker

Dear Ben and Brad,

it is with deep sorrow that I learned about the loss of Mike Jura.

I knew him mainly through the work on polluted white dwarfs, and his ideas have been truly transformative. He will surely be sorely missed.

Please, convey my deepest condolences to Mike's family and his colleagues at the Department.

Roman Rafikov

I will always feel indebted to Mike because of his support for me and my science during the cryogenic Spitzer mission. One of my most highly cited papers, and one that I'm most proud of, involved the forms that interstellar hydrocarbon dust can take, and the key spectrum that made it all possible was out of Mike's program. He very kindly allowed me to feature it in a paper I led, and it all worked out very well. I'd like to say something about that in some way.

Perhaps there are others out there who would also like to express their appreciation in some way. If y'all were to publish some kind of online proceedings after the fact, a few of these contributions might **really show the rest of the community how much Mike was able to lead us all in his own quiet way.**

Take care, Greg Sloan

Hi Ben,

Jay relayed the sad news that Mike had passed away. I was very sorry to hear this. His scientific contributions have been an inspiration; he will be sorely missed. My thoughts are with his family and close friends and colleagues.

Best wishes, Mark Wyatt

Dear Ben,

I was very sad to hear that Mike Jura passed away. I would have loved to attend this symposium to celebrate his life and show my admiration for him and for his scientific career, but my wife and I are expecting our second baby at the end of August, and I will not be able to travel because of that.

- Mukremin Kilic

When I was a grad student, Patrick Huggins and Al Glssgold were very close to Mike - he came through NYU a lot. Since I was the only Astro grad student, I was always invited to dinner with them all, so did get to know Mike a bit professionally. He was a super nice guy, and very highly thought of.

Anne Kinney

How I remember Mike: We first met when my husband (Don Brownlee) and I were spending our winters in CA and I was teaching Astro 3 in 1977, 1980, 1981. Mike was one of the faculty then that really impressed me, both as **an intense scientist** (I was not working in his field but he was always interested in what I was working on) but also as **one of the kindest and supportive men I know**. He even found an apartment for us on our last visit, went to see it and rented it to make our lives easier. We lost touch for a while but were in contact again when his research on white dwarf abundances intersected with mine. We will miss him but he will always be in our memories.

Paula Szkody

Dear Ben,

That is indeed a very bad surprise and very, very sad news. Like all colleagues I have very great respect for his work, but I did not really know him personally. But from his graduate students I have only heard the highest praise; one sentence I remember very well was "he is a very nice gentleman".

Detlev Koester

Dear colleagues,

I have just learned the terribly sad news of Mike Jura's passing. While I have never worked with him as closely as most of you do, I had had the chance to exchange with him on many occasions during my time at UCLA, admiring his incredibly sharp mind and the breadth of his expertise. His loss will be felt much beyond UCLA.

Gaspard Duchene

