ASTRONOMY

New Results Reawaken Quasar Distance Dispute

Two groups of researchers last week sought to deliver separate killer blows to a controversial theory about quasars. Instead, they seem to have simply stirred up the same old hornets' nest. "It's hard for me to believe that people on either side of the debate will ever admit they're wrong," says Jack Sulentic of the University of Alabama, Tuscaloosa.

Conventional wisdom says that quasars are the extremely luminous cores of very distant galaxies. A quasar's distance is derived from the redshift in its spectrum, which is thought to be caused by the expansion of the universe. But a small group of prominent astronomers, including the late Fred Hoyle and Margaret Burbidge of the University of California, San Diego (UCSD), believes that quasars are bits of star stuff ejected by quite nearby active galaxies and that at least part of their redshift has an intrinsic cause.

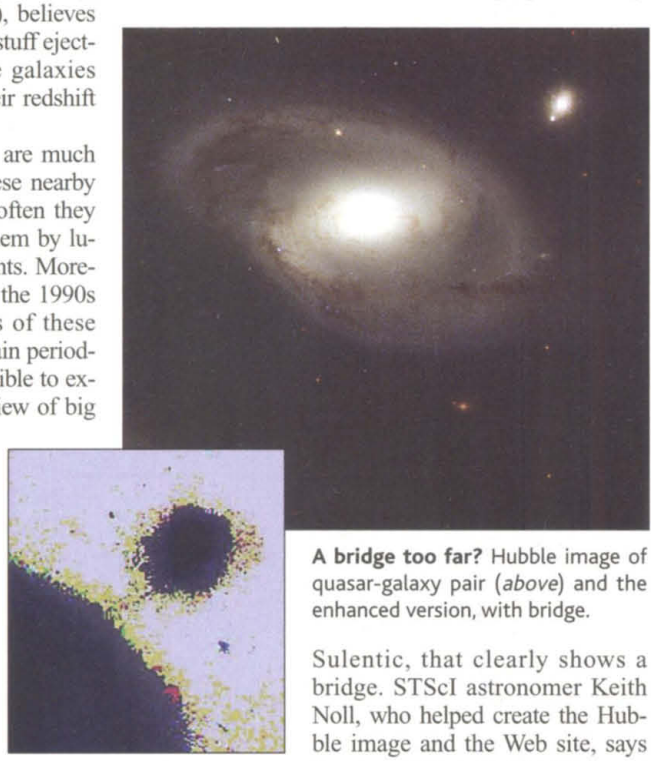
The evidence? Quasars are much more numerous around these nearby active galaxies, and quite often they seem to be connected to them by luminous bridges and filaments. Moreover, studies carried out in the 1990s indicate that the redshifts of these quasars cluster around certain periodic values. All this is impossible to explain in the conventional view of big bang cosmology.

But now, astronomers at the University of Nottingham in the U.K. report in the current *Monthly Notices of the Royal Astronomical Society* (*MNRAS*) that they can find no evidence for redshift periodicities in a much larger sample of purported quasar-galaxy pairs taken from the recently completed Two Degree Field (2dF) survey. "Our plot shows there's nothing there," says team member Edward Hawkins.

End of controversy? Hardly. Geoffrey Burbidge, Margaret Burbidge's husband and fellow UCSD astronomer, says the article "is a real piece of dishonesty." According to him, his collaborator Bill Napier of the Armagh Observatory in Northern Ireland had already pointed out a serious statistical flaw in the analysis before it was submitted for publication. Napier, who is "quite open-minded" about the interpretation, believes the periodicity is there. "Further analysis ... would seem to be called for," he and Burbidge write in a rebuttal paper submitted to *MNRAS*. However, Hawkins counters that there was no need to change anything in the paper. "We got a very favorable referee report," he says.

Meanwhile, the Space Telescope Science Institute (STScI) in Baltimore, Maryland, issued a Hubble photo last week of the galaxy-quasar pair NGC 4319 and Mrk 205, which have very different redshifts. Almost 20 years ago, Halton Arp of the Max Planck Institute for Astrophysics in Garching, Germany, working with his then–grad student Sulentic, showed that these two objects appear to be linked by a luminous "bridge," suggesting a physical connection. The new Hubble picture shows no obvious bridge, and the STScI Web site describes its existence as "debatable."

Arp accuses STScI of "deliberately misleading the public." And this week the University of Alabama released an enhanced version of this same Hubble image, produced by Sulentic, that clearly shows a bridge. STScI astronomer Keith Noll, who helped create the Hubble image and the Web site, says there might be a "bridge" between the galaxy and the quasar, but there's no evidence that it is a real physical connection. "We are giving [Arp's] ideas more credence than they really deserve," says Noll.



A bridge too far? Hubble image of quasar-galaxy pair (*above*) and the enhanced version, with bridge.

CREDITS: (TOP TO BOTTOM) STSCI/NASA; UNIVERSITY OF ALABAMA

Arp still insists that sensitive spectroscopic observations with the new generation of 8-meter telescopes will be able to resolve the issue. But he says it's very hard to get access to a large observatory to collect the necessary data. Geoffrey Burbidge calls it a "sociological problem associated with the need to believe" that redshifts are related to distances. Clearly, neither side has spoken its last words on the subject. **–GOVERT SCHILLING**

Govert Schilling is an astronomy writer in Utrecht, the Netherlands.

YOUNG INVESTIGATORS

European Program To Fund the Best

European research officials are hatching a bold scheme to attract young scientists—and preparing to put big bucks behind it. The talent competition, part of a growing move to bolster European science across national boundaries, will offer grants totaling roughly $1.5 million over 5 years. The contest will be open to researchers in any discipline—provided that they agree to work in one of the participating countries.

Only the best and the brightest from around the world need apply for the new European Young Investigators Awards. "The award [program] will be the first of its kind, guided by scientific excellence, originality, and potential," says Finland's Lea Ryynänen-Karjalainen, who serves as scientific secretary to the European Union's Heads of Research Councils, the organization introducing the program. Research councils in the 15 European Union countries (and three associate members) will meet later this month in Athens, Greece, to hash out the details.

To launch the program in January, officials say they need a minimum of five participating countries, representing at least 100 million people. "I think it will go forward," says Heidi Diggelmann, president of the Swiss National Science Foundation's Research Council in Bern. "Even if we can't launch it on a full scale, there are enough countries on board to get started."

The competition will be open to scientists from anywhere in the world, but the winners must go to work in a participating country. Scientists from noncontributing countries will apply through a member organization. Finalists at the national level will be evaluated by disciplinary panels managed by the European Science Foundation in Strasbourg, France. Applicants must be under the age of 35 or have completed a postdoctoral appointment within the last 2 to 5 years, with consideration given for career breaks such as maternity leave, explains Ryynänen-Karjalainen. The awards will cover salary, overhead, and personnel.

Participating countries hope to fund between 30 to 50 awards in the first round, with the number rising as more countries join in. But there are no guarantees that a country that contributes to the pot will have even one winning applicant working at any of its institutions. "There will be no quota of 'just return,' " explains Christoph Mühlberg of the German Research Council (DFG) in Bonn.

–ERICA GOLDMAN