Not so bright? This quasar, one of the four most distant known, might be magnified by an intervening galaxy.

denizens of the early universe.

The farthest quasars have popped up during the Sloan Digital Sky Survey (SDSS), a multiyear effort to map the sky in exhaustive detail (*Science*, 25 May 2001, p. 1472). To date, SDSS astronomers have found four quasars that shone brilliantly when the universe was less than a billion years old. Cosmologists presume that black holes with billions of times the mass of our sun powered those early blazes by devouring gas at the cores of the first big galaxies. However, theories of galaxy evolution struggle to explain how such massive objects arose so soon after the big bang. Gravitational lensing might ease the problem: If some quasars are actually dimmer than they appear, then their host galaxies must be correspondingly smaller.

To calculate how lensing affects our view of that epoch, Loeb and Harvard postdoctoral researcher J. Stuart B. Wyithe worked backward from the statistics of quasars and lenses closer to Earth. As they explain in the 27 June issue of *Nature*, they considered two key factors. First, it's more likely that a random galaxy will align with and magnify a distant quasar, because its light travels a much longer path. Second, lenses might allow telescopes to detect many faint quasars that they otherwise wouldn't find. This "magnification bias" could be extreme in the early cosmos, says Loeb, where modest quasars might greatly outnumber the truly bright ones.

When Wyithe and Loeb combined both factors, they found that gravitational lensing might boost the apparent light output of 10% to 30% of the most distant quasars by a factor of 10 or more. "That's a surprisingly big fraction, and observers need to correct for it," Loeb says. Indeed, the proportion is far higher than astronomers are used to seeing. Of the quasars that existed when the universe was 3 billion to 4 billion years old, just one in every 750 are magnified, according to a recent survey by astronomer Joshua Winn of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, and his colleagues.

"If Wyithe and Loeb are right, the early universe will be all that much harder for us to understand because of the distorted view," comments Princeton University astrophysicist Edwin Turner. A test will come soon: Starting this fall, Princeton astronomer Michael Strauss and his SDSS partners will use the Hubble Space Telescope to examine dozens of quasars, including their four most distant ones, for multiple images—the signpost of a lensed quasar. Moreover, SDSS should find 10 to 20 more quasars at similar distances in the next several years. **–ROBERT IRION**

CANADA

Few Women Win New Academic Chairs

OTTAWA—Statistics can often be subtle and hard to interpret. But sometimes, says Wendy Robbins, co-founder of the women's studies program at the University of New Brunswick in Fredericton, they can slap you right in the face. That's what she hopes will happen to Canadian university administrators reading a new report showing that women are seriously underrepresented in a fledgling program to help the country retain its best academic talent.

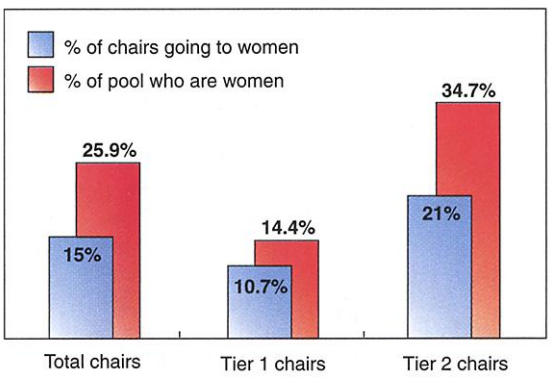
In October 1999 the government committed $585 million to create 2000 new posts under the Canada Research Chairs (CRC) program. The program provides $910,000 over 7 years to free up established researchers (Tier 1) from teaching duties and $325,000 over 5 years to help universities hire rising stars (Tier 2) to replace aging faculty. The fifth round of winners was due to be announced this week.

A report looking at the first four classes shows that women, who represent 25% of the total academic pool, have received just under 15% of the 532 chairs (see graphic). The gender gap is especially wide for the Tier 2 posts, 21% of which have gone to women despite the fact that they make up 35% of the assistant and associate professors eligible for the award. CRC officials commissioned the study, done by Nicole Bégin-Heick, professor emeritus of biochemistry at the University of Ottawa, after receiving numerous complaints from female faculty members across the country.

Bégin-Heick says one possible reason for the imbalance is that women "are perhaps less ambitious than men, and they are less likely to seek these honors, if you want to call it that." But Robbins, an English professor who's vice president of the women's issues network at the Humanities and Social Sciences Federation of Canada, points the finger at "the old boy's network of deans and academic vice presidents" that shuts out women. "Several universities have not appointed a single woman," she notes. "One would have thought, by now, that enlightenment would have prevailed." Robbins says that affirmative action plans and more aggressive recruitment are needed to make a real difference in the short run.

Imposing quotas would be difficult because universities are autonomous institutions, says René Durocher, CRC secretariat executive director. "You can't give orders to these people." But he says that CRC could seek legislative approval for such a "last resort" measure if the gender imbalance doesn't significantly improve over the coming year.

The heads of the councils that fund social science and medical research have sent letters to all university presidents, beseeching them to redress the imbalance in future competitions for the roughly 1400 chairs still to be awarded. "I trust you will take advantage of this opportunity to reflect upon the significance of these numbers and, more importantly, what your university plans to do to address the situation," wrote Marc Renaud, president of the social sciences granting council and chair of the CRC steering committee, who attached a table showing the gender distribution of all nominations for each participating university.



Seats at the table. Women are underrepresented in both categories of the Canadian Research Chairs program.

Meeting last week in Toronto, Durocher and 100 senior university administrators proposed that institutions provide a written rationale for the gender distribution of all future nominations. They also want the federal government to create 400 additional chairs in the social sciences and humanities, in which women constitute a larger proportion of the professoriate. Those fields now get only 20% of the chairs, despite representing a majority of the professoriate, with the rest split equally between the biomedical and natural sciences.

–WAYNE KONDRO

Wayne Kondro writes from Ottawa.

CREDITS: (TOP TO BOTTOM) STEPHEN KENT/SDSS COLLABORATION; SOURCE: CANADIAN RESEARCH CHAIRS