

REBUTTALS

In the ongoing debate over the nature of extragalactic redshifts and the validity of current cosmological models I believe a number of misleading statements have been made and widely publicized. Some of the more prominent examples are discussed below where I attempt to supply fuller information on important observations.

NGC 4319 and Markarian 205 - Why Hide a Cosmic Bridge?

In 1971 with the 5 meter telescope on Mt. Palomar a luminous bridge was discovered between the low redshift galaxy NGC 4319 and the much higher redshift quasar, Markarian 205. Because this contradicted the assumption that redshift was unvariably a measure of velocity and distance, it invalidated the hypothesis of an expanding universe. Conventional astronomers fiercely resisted this evidence but as it accumulated for this and numerous other similar examples the results were increasingly suppressed and ignored.

Flash forward to October 2002. The Space Science Telescope Institute issued a press release with a picture of NGC 4319/Mrk 205 showing no bridge and with the imputation that it never existed. After all these years we suddenly learn there was serious evidence which has now been finally refuted. But wait a minute! The picture actually does show the bridge. If you just download the web image and increase the contrast at faint levels, there it is! *Actually the NASA "proof" picture was not even printed deeply enough to show the outer spiral arms of the galaxy!* There is a narrower core to the bridge, a kind of umbilical cord which the higher resolution HST can now pick out. Many non professionals immediately produced very good pictures of the bridge *from the same NASA picture*. Here is shown a comparison of the press release picture and a deep print of the same picture by Jack Sulentic of the University of Alabama. (click here for mk205a.jpg)

Science, 11 Oct. 2002, p. 345, ran a small article on the statements from both sides, but most science magazines just accepted the NASA release as refutation of the connection. Personally I can say that after more than 30 years of evidence disputed by widely publicized opinions that the bridge was false, I was saddened that not one prominent professional has now come forward to attest that it is, in fact, real.

Quasars in Back of Galaxies?

Mrk 205 figures in another long standing argument about distances of quasars. It was long ago argued that since low red shift absorption lines were often seen in the spectra of high redshift quasars that the quasars had to be at great distances in back of the galaxies which were causing the absorption. Some partisans aggressively searched for absorption lines from NGC 4319 in the spectrum of the bright Mrk 205. At first they did not find any but finally they found a weak line and announced that this proved that Mrk 205 was in back of the galaxy. But they barely mentioned that the line was about 10 times fainter than than expected. I.e. *the quasar was indicated to be only 10% in back of the galaxy* (Or one might say 90% in front.)

This illustrates of course that an object can be just in back, or even within the envelope of the low redshift absorber. The argument used to be that for quasars of different redshift closely along the same line of sight that the absorption lines were almost always from the lower redshift quasar, thus showing that the high redshift quasars were always in back of the low. But if the high redshift quasars were smaller than the low redshift ones, as indicated by local quasars, then the high redshift ones could be just in back of, or even within, the larger envelope of the low redshift quasar. Astronomers got quite carried away for a while measuring quasars with larger and larger separations along the line of sight and deriving larger and larger clouds around the quasars, or intervening in the line of sight. Amusingly they derived clouds so ridiculously large in linear dimension, if at redshift distances, that they research in this direction was dropped.

Is Space Filled with Intervening Gas Clouds?

The many absorption line systems seen at lower redshifts, particularly in the spectra of high redshift quasars, would naturally arise if cooler gas is ejected toward the observer from the high redshift nucleus. We know these active nuclei intermittently eject material at about the observed velocities and this would be the expected observational consequence. The conventional picture of myriads of cool clouds filling an enormous path length from the quasar to the observer is very hard to substantiate from what we know of the composition of local space. On the other hand clouds close to the ejecting nucleus is supported by their redshift distribution. In some cases the absorption at rather large negative redshifts shows evidence of excitation due to proximity to the quasar, which would rule out its being at a much further separated, red shift distance.

Space filled with cool gas clouds (proto galaxies) would be further ruled out because we would see them in radio (hydrogen surveys) and they would also produce too many young, star forming galaxies.

3C273

An especially embarrassing skeleton in the intervening galaxy closet is the brightest apparent magnitude quasar in the sky, the famous 3C273 at $z = .158$. Evidence since 1966 places this brightest of quasars in the center of the Local Supercluster even though its redshift is 52 times greater. After Hubble Space Telescope took an ultraviolet spectrum, it was proudly announced that it contained unexpectedly many absorption lines with redshifts reaching up to that of 3C273. I said at the meeting at which it was announced that it was "unlikely that there would be ten times as many clouds of various redshift all stretched out just behind the Virgo Cluster reaching in the direction of the far background 3C273." It seemed like evidence that material of different redshifts was in fact present in the Virgo Cluster along with the prototype quasar. There has been silence since then on this point.

Coming Attractions

Quantization of Redshifts and Local clusters of Quasars (in preparation).