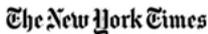
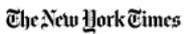


HOME PAGE	MY TIMES	TODAY'S PAPER	VIDEO	MOST POPULAR	TIMES TOPICS	Try Electronic Edition Log In Register Now											
 						<h2 style="margin: 0;">Space & Cosmos</h2>											
						<input checked="" type="radio"/> Science <input type="radio"/> All NYT <input type="text" value="Search"/>											
WORLD	U.S.	N.Y. / REGION	BUSINESS	TECHNOLOGY	SCIENCE	HEALTH	SPORTS	OPINION	ARTS	STYLE	TRAVEL	JOB	REAL ESTATE	AUTOS			
ENVIRONMENT SPACE & COSMOS																	
<h3 style="margin: 0;">Discover How Randomness Rules Our Lives in The Drunkard's Walk</h3>																	
<h2 style="margin: 0;">Galaxies Twice as Bright as They Seem, Study Finds</h2> <p style="font-size: small;">By DENNIS OVERBYE Published: May 17, 2008</p>						<div style="border: 1px solid #ccc; padding: 5px;"> <p style="font-size: x-small; margin: 0;">SIGN IN TO E-MAIL OR SAVE THIS</p> <p style="font-size: x-small; margin: 0;">PRINT</p> <p style="font-size: x-small; margin: 0;">REPRINTS</p> <p style="font-size: x-small; margin: 0;">SHARE</p>  </div>											
<p>The universe, it seems, has been operating with a dimmer switch.</p> <p>The galaxies are actually twice as luminous as they appear to us in the sky, according to a new study by an international team of astronomers led by Simon Driver, of the University of St. Andrews in Scotland. Dust, however, blocks half the light from getting out.</p> <p>The results, which have just been published in The Astrophysical Journal Letters, resolve a longstanding problem with the energy budget of the cosmos.</p> <p>Interstellar dust absorbs the visible light emitted by stars and then re-radiates it as infrared, or heat, radiation. But when astronomers measured this heat glow from distant galaxies, the dust appeared to be putting out more energy than the stars.</p> <p>“You can’t get more energy out than you put in, so we knew something was very wrong,” said Dr. Driver, in a press release issued by the Science and Facilities Council in the United Kingdom.</p> <p>He and his colleagues embarked on a program of comparing a model of galactic dust with measurements of the light from 10,000 nearby galaxies using the Isaac Newton Telescope in the Canary Islands and other instruments. That allowed them to calculate by color what percentage of starlight was escaping the galaxies and getting to telescopes: 20 percent of short-wavelength ultraviolet light, 45 percent of green light, 75 percent of the red light, and so on.</p> <p>The end result, that the stars in galaxies are actually pumping out twice as much energy as previously thought, was still a shock, Dr. Driver said. For the universe as a whole, they calculated, that amounts to 5 quadrillion watts per cubic light-year from thermonuclear fusion, a nice new number for those concerned about their cosmic carbon footprints.</p> <p>The results also mean that there is about 20 percent more mass in stars than previously thought. But since stars make up such a small percentage of the universe to begin with — dark matter and dark energy account for 95 percent or so — it is a small adjustment over all.</p> <p>“Basically increasing the stellar mass in the nearby universe by 20 percent has little impact,” Dr. Driver said in an e-mail message from Scotland.</p> <p>The results will have more impact, he said, on comparative observations of nearby and faraway galaxies, where, he said, dust has not previously been taken into account.</p>						<p style="text-align: right;">More Articles in Science »</p> <h3 style="margin: 0;">Health Update</h3> <p style="font-size: x-small;">A weekly dose of health news on medical conditions, fitness and nutrition.</p> <div style="border: 1px solid #ccc; padding: 5px; width: fit-content;"> <input type="text" value=""/> <input type="button" value="Sign Up"/> </div> <p style="font-size: x-small;">See Sample Privacy Policy</p>											
						<h3 style="margin: 0;">Discover how randomness rules our lives</h3> <p style="font-size: 2em; margin: 0;">Read</p> <h2 style="margin: 0;">Leonard Mlodinow's The Drunkard's Walk</h2>											
						<p style="text-align: center;">MOST POPULAR</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">E-MAILED</td> <td style="padding: 2px;">BLOGGED</td> <td style="padding: 2px;">SEARCHED</td> </tr> </table> <ol style="list-style-type: none"> 1. Well: Finding the Best Way to Cook All Those Vegetables 2. Older Brain Really May Be a Wiser Brain 3. Scientist at Work Claudius Conrad: A Musician Who Performs With a Scalpel 4. Who Is the Walrus? 5. Practical Traveler Airfares: Beating the Bushes for a Bargain Ticket 6. David Brooks: Talking Versus Doing 7. Thomas L. Friedman: Obama and the Jews 8. Your Money: Five Basics for Building a Solid Financial Future 9. Thomas L. Friedman: Imbalances of Power 10. Maureen Dowd: The Last Debate <p style="font-size: x-small; text-align: right;">Go to Complete List »</p>									E-MAILED	BLOGGED	SEARCHED
E-MAILED	BLOGGED	SEARCHED															
						<div style="border: 1px solid #ccc; padding: 5px;">  TRAVEL nytimes.com/travel </div> <div style="text-align: center; margin: 5px 0;">  </div> <div style="border: 1px solid #ccc; padding: 5px;"> <h3 style="margin: 0;">The Frugal Traveler's Grand Tour</h3> <p style="font-size: x-small;">Also in Travel:</p> <ul style="list-style-type: none"> Does the 'real' Ireland still exist? Last-minute options for an Olympics fan From Iraq to Disney World </div>											
<p style="text-align: right;">More Articles in Science »</p> <p style="font-size: x-small;">Free trial. Read the complete New York edition of The Times on computer, just as it appears in print.</p>						<div style="border: 1px solid #ccc; padding: 5px;"> <p style="font-size: x-small;">Ads by Google what's this?</p> <p style="font-size: x-small;">Supermagnet Spheres Great source - smallest 5mm dia to enormous 2 inch dia-daily low price www.supermagnetman.net</p> <p style="font-size: x-small;">Astronomy, Science & God</p> </div>											

"Was the Universe Created?" Get the Latest Facts from Hubble
AtheistsRiddle.com

SPACE & NASA Prints

Iconic Imagery as Fine Art Prints Any Size, Finish & Frame;We Deliver
www.printree.com

ADVERTISEMENTS

All the news that's fit to personalize.

Which movies do the Critics recommend?

In a world of second opinions, get the facts first.



Tips

To find reference information about the words used in this article, double-click on any word, phrase or name. A new window will open with a dictionary definition or encyclopedia entry.

Related Searches

- Stars and Galaxies [Add Alert](#)
- Space [Add Alert](#)
- Science and Technology [Add Alert](#)
- Astronomy and Astrophysics [Add Alert](#)

INSIDE NYTIMES.COM



DANCE »



This Season, a Return of Old Friends

WASHINGTON »



Homeland Security Stands by Its Fence

DINING & WINE »



Treats for the Treasure Hunters

OPINION »

The Politics of Hunger

A Republican political analyst talks about why the G.O.P. doesn't seem to have the appetite to fight for Senator John McCain.

SPORTS »



Red Sox' No-Hitter Puts Varitek in Record Books

OPINION »



Op-Ed: China's Class Divide

[Home](#) | [World](#) | [U.S.](#) | [N.Y./Region](#) | [Business](#) | [Technology](#) | [Science](#) | [Health](#) | [Sports](#) | [Opinion](#) | [Arts](#) | [Style](#) | [Travel](#) | [Jobs](#) | [Real Estate](#) | [Automobiles](#) | [Back to Top](#)
Copyright 2008 The New York Times Company | [Privacy Policy](#) | [Search](#) | [Corrections](#) | [RSS](#) | [First Look](#) | [Help](#) | [Contact Us](#) | [Work for Us](#) | [Site Map](#)