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# Hubble Redshift Lab Answers

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### **Hubble Redshift Lab Answers**

To get an estimate of the size of the universe simply put Hubble's constant in

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the relationship: The redshift is calculated by the following relationship:  $Size = (Speed\ of\ light) / (Hubble's\ Constant) \times Redshift$ ,  $z = \frac{Observed\ wavelength - rest\ wavelength}{rest\ wavelength}$  Give your answer in Mpc. rest wavelength M.J.Coe June 2009 The velocity of the galaxy is the ...

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## **UNIVERSITY OF Southampton Hubble Constant Lab Intr ...**

Hubble Redshift Lab Report See the bottom of the answer sheet for some important values and relationships for this lab. Answer the questions below based on data you have collected and the graph and calculations you have done. 1. Which of the galaxies you

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looked at do you think is farthest away?  
Galaxy ID 51976 2.

### **Lab09 - Hubble Redshift Lab Report** **See the bottom of the ...**

these, in conjunction with the  
magnitudes of the galaxies, to derive  
the Hubble relation. ANSWER THE  
FOLLOWING QUESTIONS IN YOUR LAB

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NOTEBOOK. 1. Explain redshift and what it implies. 2. You should also note that the dimensions of  $H_0$  can be expressed as  $s^{-1}$ . Do the dimensional analysis to show how this is possible. (You will use this later to determine

### **AST-103L Spring 2001: Hubble Redshift-Distance Relation**



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The Hubble Redshift Distance Relation. I. Objective You will verify the observed fact that all galaxies are moving away from us, and you will use the Doppler shift formula to calculate how fast they are receding and use the magnitudes of galaxies to determine their distances. You will prove for yourself that the nature of their motion means that the

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Universe is expanding, and you will calculate the age of the Universe.

## **The Hubble Redshift Distance Relation**

velocities of galaxies are measured using a photon-counting spectrograph. To show how this information, along with estimates of galaxy distances (from their

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integrated apparent magnitudes) yields the classic Hubble redshift- distance relation. To determine the value of the Hubble parameter and the expansion age of the universe.

### **PROJECT CLEA: THE HUBBLE REDSHIFT-DISTANCE RELATION**

View Lab Report - 2.08 Lab

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Questions.docx from SCIENCE 101 at Nevada Virtual Academy. Name: Date: Student Exploration: Big Bang Theory – Hubble's Law Vocabulary: absolute brightness, absorption

## **2.08 Lab Questions.docx - Name Date Student Exploration ...**

Pre-lab #11 Hubble's Law ... shown at

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left, of several galaxies named on the right. Both the extent of the redshift (denoted by the horizontal yellow arrows) and the distance from the Milky Way Galaxy to each galaxy (numbers in center column) increase from top to bottom. The vertical yellow arrow in the top spectrum highlights a particular ...

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## **Pre-lab #11 Hubble's Law - Middle Tennessee State University**

First, rearrange the terms of the Hubble relation to calculate distance as  $d = v / H_0$ . Then rearrange the terms of the redshift equation to get  $v = z c$ .

Combining the two results gives.  $d = z c / H_0$ . Again, this formula is only appropriate if the recession velocity is

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much less than the speed of light, or if  $z \ll 1$ .

### **Teach Astronomy - Relating Redshift and Distance**

Hubble noticed that the cosmological redshift changed in a linear way: in general, the further away a galaxy was, the more redshift it showed. If it was

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twice as far, there was twice as much...

## **Astronomy --- Galactic Redshifts and "Hubble's Law ...**

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### **hubble redshift lab answers - Bing**

Edwin Hubble observed a systematic trend between the redshifts of galaxies and their distances from earth. This result was interpreted to mean that the universe is expanding. Now Hubble was not a believer in the Creator, but rather that the universe was the product of

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random chance and the laws of physics.

## **Speculation on Redshift in a Created Universe | Answers in ...**

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to go to the books start as without difficulty as search for them. In some cases, you likewise do not discover the publication clea lab answers hubble redshift that you are looking for. It will certainly

### **Clea Lab Answers Hubble Redshift**

In this CLEA lab, Phil introduces students

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to the instruments and computations necessary to measure the distance to far away galaxies. Students will use the redshift to determine whether or not ...

### **The Hubble Red Shift Lab**

the hubble law Links to Clickable Images and Spectra We will be working with real data: The galaxy spectra were obtained

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by Robert C. Kennicutt Jr. of the University of Arizona, and are published in The Astrophysical Journal Supplement Series, volume 79, pages 255-284, 1992, and are also available on the WWW.

## **Hubble Law Lab: Links to Clickable Images and Spectra**

Estimating Hubble's Constant

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INSTRUCTIONS Assume all of the sample galaxies in the image below are about the same size, so that those that appear smaller are farther away - bigger is closer. In this exercise your mouse pointer will be your redshift spectroscope. 1.

## **Hubble's Law | Activity Lab**

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Most importantly, in general, more distant galaxies are receding faster from us. The correlation between radial velocity, or redshift, and distance is one of the foundations of modern cosmology. Hubble's discovery of a correlation between distance and redshift for galaxies cemented his reputation as one of the giants of science.

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## **Teach Astronomy - Galaxy Redshifts**

Hubble's Law Two years later, in 1929, Hubble confirmed the Universe is expanding. Hubble also was able to infer the recessional velocities of a number of objects from the spectral redshifts he observed. Hubble's Law states that an object's recessional velocity is



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proportional to the distance from the observer.

### **Hubble's Law | Astronomy Lab**

Answer this in your lab book and in any written report. From your plot of  $V$  vs  $D$ , fit (using an error-weighted least squares fit in Excel) a straight line and thus estimate the Hubble constant and

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its uncertainty in units of  $\text{km s}^{-1} \text{Mpc}^{-1}$ .  
Record the equation of your best-fit line,  
and draw it on your plot.

### **LAB C. The Hubble Redshift- Distance Relation**

PHYS133 – Lab 9 The Hubble Law. Goals:  
Find the relationship between the  
redshift in spectra of distant galaxies

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and the rate of the expansion of the universe. Use observations of the redshifts of galaxies, along with their coordinates in the sky, to produce a three-dimensional map of a nearby region of the sky. Understand how matter is distributed on the largest scales in the universe and appreciate some of the difficulties involved in

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making and interpreting large- ...

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