

# Dang Pham

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## RESEARCH

*Gravitational Lensing (work in progress)*

Summer 2015 - Present

Astronomy research at the Harvard-Smithsonian Center for Astrophysics on gravitational lensing. Conducted data analysis by programming to find irregularity in events to seek for dark objects such as black holes or planets, and prediction of possible future events from statistical analysis and database cross-matching. Research directed and guided by Dr. Rosanne Di Stefano. (anticipating publication)

Topic keyword: light curves, high proper motion stars, neutron stars, statistical data analysis, high mass objects

*Research on Diatomic Anions*

2014-2015

Astronomy - chemistry research on possible exotic diatomic anions' (such as  $H_2^-$  and  $N_2^-$ ) existence, properties, and potential impacts in stars or interstellar mediums. Guided by Dr. Edward Chen and Herman Keith. (work published)

Topic keyword: stellar astrophysics, anions, physical chemistry of diatomic anions.

*Variable Stars Light Curve Research*

Summer 2014

Astronomy research and observations at Harvard University on variable stars' trends in variability and periods of RR Lyrae and SX Phe type stars. Guided by Dr. Joshua Schroeder and Dr. Rosanne Di Stefano. (work published)

Topic keyword: trends, light curves, periods, RR Lyrae, SX Phe, variable stars.

*Electron Affinity of Lead*

2013

Analysis and theoretical calculation of the electron affinity of Pb that shows that accepted value of the electron affinity of lead in the NIST may be erroneous(not published - research paper available). Guided by Dr. Edward Chen and Herman Keith.

Topic keyword: lead, electron affinity

## Scientific Peer-Reviewed Publications

*Hylleraas hydride binding energy: Diatomic electron affinities*

Published in 2015

Edward S. Chen, Herman Keith, Tristan Lim, Dang Pham, Reece Rosenthal, Charles Herder, Sunil Pai, R. A. Flores, Edward C. M. Chen. Journal of Molecular Modeling (2015) 21:79, (DOI:10.1007/s00894-015-2598-0)

*Report on the Photometric Observations of the Variable Stars DH Pegasi, DY Pegasi, and RZ Cephei*

Published in 2014

Abu-Sharkh, I., Fang, S., Mehta, S., and Pham, D. 2014, Journal of the American Association of Variable Star Observers (JAAVSO), 42, 315

## EDUCATION

*Cypress Christian School*

August 2012 - Present

11123 Cypress N. Houston Road, Houston

Graduation: Anticipated 2016

*Harvard Summer School*

Summer Term 2014 and 2015

ASTR S-30 A Short Tour of the Universe Guided by Einstein and Others

ASTR S-35 Fundamentals of Contemporary Astronomy

STAT S-100 Statistics: Introduction to Quantitative Methods

*Independent Study*

2012-Present

Studied Mechanics, Electricity and Magnetism, and Thermodynamics

Mentor: Herman Keith

	<i>University of Edinburgh, Coursera</i> Astrobiology and the Search for Extraterrestrial Life Accomplished with Distinction	March 2013
	<i>Computer Science, Udacity</i> Introduction to Computer Science Completed With High Distinction	July 2012
<b>VOLUNTEER SERVICES</b>	<i>Chapel Praise Team</i> Grade 9 Hours per week: 3 hours Playing piano during practice and school chapel	September 2012 - May 2013
	<i>Doan Thanh Nien Anh Sang</i> Grade 11 La Vang Catholic Church group and choir Singing for weekly Sunday masses and visiting the sick and elderly. Hours per week: 3-6 hours	October 2014 - Present
	<i>Hospital Volunteering at Christmas for Children</i> Grade 11 Hours: 5 Service with the National Honor Society. Played with children who had to stay in the hospital for Christmas.	December 2014
	<i>Geometry and Algebra 1 Tutoring</i> Grade 9, 10 Hours per week: 2 hours Helping 9th-10th grade students on math topics primarily on Algebra 1 and Geometry.	September 2012 - October 2014
	<i>Physics Assistant to Middle School Science Fair</i> Grade 10 Hours per week: 3-5 hours Aiding 8th grade science fair students on physics topics primarily on electrical circuits and conductivity.	December 2013 - March 2014
<b>LEADERSHIP POSITIONS</b>	<i>Vice President for National Honor Society</i> Grade 12 Hours per week: 3-7 hours Working and helping the president to coordinate events and management of the National Honor Society.	April 2015 - Present
	<i>Secretary for National Honor Society</i> Grade 11 Hours per week: 3-7 hours Sending communications to members of the National Honor Society and helping to organize events.	April 2014 - April 2015
<b>EXTRA-CURRICULAR ACTIVITIES &amp; ORGANIZATIONS</b>	<i>Texas Music Educators Association Regional Choir Member</i> Grade 11 Tenor 2, Region 27	October 2014

*National Honor Society Membership* November 2013 - Present  
Grade 10, 11

*Chamber Choir* April 2012 - Present  
Grade 9, 10, 11  
Piano Accompanist, Tenor 2 Singer, Bass singer

*CCS Academic Team* March 2015, March 2014  
March 2015 - Competed at state level in Math, Calculator, and Science  
March 2014 - Competed at regional level in Calculator

*American Association of Variable Stars Observers - Contributor* July 2014 - Present  
222 Observations submitted

## **AWARDS AND HONORS**

*Hypercube Scholar (Selected)* March 2015  
Award by Hyperchem  
Selected by Dr. Edward Chen

*Presidential Service Award* May 2013 and May 2015  
Silver Award on May 2015

*ACSI Distinguished Student Award* May 2015  
Recognized in Academics, Leadership, Fine Arts, Christian Service

*Texas Music Educators Association (TMEA)* November 2014  
All-state Area Audition  
Candidate to All-state Small School TMEA Choir.  
First chair regional, and pre-area

*Texas Association of Private and Parochial Schools*  
State Superior Rating for Piano Solo March 2015, 2014, 2013

*Texas Association of Private and Parochial Schools*  
State Excellent Rating for Vocal Solo March 2015

*Maestro Award for World Heritage Festival* March 2014, February 2013

## **COMPUTER SKILLS**

*Programming Languages:* Python 2.7, .NET Programming  
Skill level: Intermediate  
Self-taught in computer programming, as well as completing one Introduction to Computer Science course online. Created programs for researches mentioned above.

*Client-side Website Designing:* Javascript, CSS3, HTML5, AJAX, jQuery  
Skill level: Intermediate  
Developed websites. Projects mainly personal and for school-related topics such as the National Honor Society's website.

## **LANGUAGES**

*Languages:* Vietnamese, English, Spanish  
Native language: Vietnamese  
Fluent in English  
Intermediate in Spanish