

Tommy Clark  
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## Education

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California Institute of Technology; Graduation Expected June 2024  
Physics Major 4.2/4.0 GPA

Stanford Pre-Collegiate University Level Online Math and Physics; Graduation June 2020  
GPA 4.0/4.0

Hinsdale Central High School; Graduation May 2020  
GPA 5.96/5.0, SAT: 1560

Relevant Coursework: **Physics:** Advanced Quantum Mechanics, Quantum Computation/Information, Group Theory for Physicists, Statistical Mechanics, Computational Physics, Mechanics, Special Relativity, Electricity and Magnetism; **Math:** Multivariable Calculus, Linear Algebra, Partial Differential Equations, Statistics, Group Theory, Stochastic Calculus, Complex Analysis; **Computer Science:** Data Structures, Physical Data Analysis, Quantum Computation and Information; **Other:** Game Theory in Politics, Introduction to Geology, Introduction to Economics, Chemistry

Awards: Caltech Named SURF Fellow (David L. Glackin Memorial SURF), National Merit Semifinalist (2020), Fermilab Science Award (2020)

## Research Experience

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### **Flight Delay Prediction** - (2022-Present) *Chicago, IL*

- Used Google's TensorFlow to predict flight delay metrics, feeding in current weather outlooks and past data.
- Developed Statistical Phase Transition model of delay traffic in the continental U.S.

### **Data Processing for GQuEST Quantum Gravity Experiment** - (2022-Present)

*California Institute of Technology*

- Demodulated and inverted electrical signals to stabilized laser for measurements
- Read and processed over 2 billion samples per second using Xilinx RFSoc 2x2

### **Astronomy SURF, Niels Bohr Institute Copenhagen** - (2021-Present)

*Niels Bohr Institute, Copenhagen, Denmark*

- Worked with Charles Steinhardt on implementing a novel temperature correction to photometry to better understand the cessation of star-formation of a galaxy.
- Developed various theoretical models for galaxy evolution, introduced a new phase of galaxy evolution.

Tommy Clark

- Co-authored two papers with two to come.

**Aeronautical Engineering Internship, Princeton University** (June 2018)

- Worked with Dr. Luigi Martinelli to design airfoils using artificial intelligence.
- Tested the performance of our 3D models in a wind tunnel.
- Developed skills in python and numerical analysis.

**Talks**

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**Why do Galaxies Die?** DAWN Cosmic Center, Niels Bohr Institute, Copenhagen Denmark (2021)

**Publications**

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**Implications of a Temperature Dependent IMF II: An Updated View of the Star-Forming Main Sequence**

Charles Steinhardt, Thomas H. Clark, et al. (Submitted 2021)

**Implications of a Temperature Dependent IMF III: Mass Growth and Quiescence**

Charles Steinhardt, Thomas H. Clark, et al. (Submitted 2021)

**Interests/Hobbies**

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- **Private Pilot License, Windy City Aviation** - (2017 - present)
- **Co-founder of SNAP Park App** - (2017-2019)
- **Self Teaching General Relativity/Quantum Cosmology**