

# Modeling the Construction and Evolution of Distributed Volcanic Fields on Earth and Mars

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## Team

Volcanic Fields on Earth & Mars

Jacob Richardso

Introduction

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Lava Flow

Vent Density

Mars Cluster

Arsia Mons Volcanic Field

Methods

Implication



Distributed Volcanism Definition

Vertical Subregions can be detailed in volcanic systems



## Outline of Talk

Volcanic Fields on Earth & Mar

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#### Introduction

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Sills Lava Flows Vent Density

Mars Clusters

Arsia Mons

Volcanic Fi Methods Results Implications

- Overview of Dissertation
- Arsia Mons
- Conclusions



## Sills in the San Rafael Swel

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Sills

Lava Flows Vent Density Mars Clusters

Volcanic Fig Methods Results

- Lidar
- Sills
- Total volume, geometry
  - Modulation of eruption style



# Lava Flows/Simulators

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Lava Flows

Vent Density Mars Clusters

Volcanic Fi Methods Results

- MOLASSES
- Tolbachik
- Validation



# Spatial Density of Clusters

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Vent Density
Mars Clusters

Volcanic Fig Methods Results

- Earth
- Mars
- Venus
- Average Intensity



# Syria Planum

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Vent Density

Mars Clusters

Volcanic Fiel Methods Results

- catalog
- trend in crater age dating
- spatial density, possible reccurrence rate



### Arsia Mons: An introduction

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Mars Clusters

#### Arsia Mons Volcanic Field

Results Implication

Conclusions

### Questions

- How?
- Can?



# Mapping

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#### Method:

Results Implications



## Volume

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#### Method:

Results Implication:



# Ages

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#### Method:

Results Implication:



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#### Method:

Results Implication:



### Recurrence Rate

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Vent Density

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### Volume Flux

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# Tie in with Ashes and glaciers?

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# Model of waning volcanism of Arsia

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Methods Results

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# Arsia Specific Conclusions

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#### Other Conclusions

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### Additional Thanks

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Results





# Questions?

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