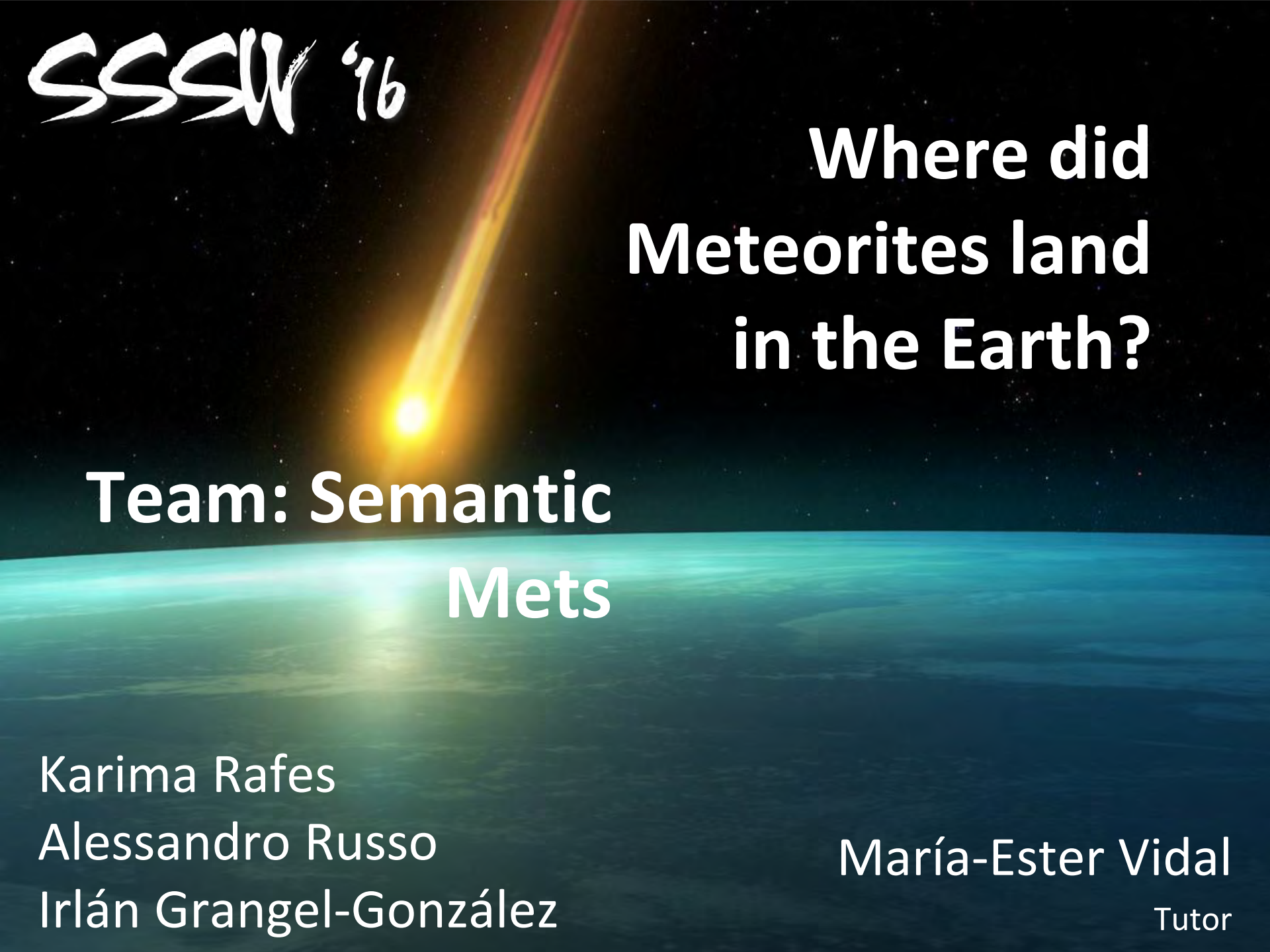

Where did Meteorites land in the Earth?

Team: Semantic Mets

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Motivation & The NASA Dataset

SSSW '16

- NASA scientist wants to improve their understanding of the Meteorite impact phenomena
- Main info available on meteorite impacts
  - name of the meteorite
  - meteorite class
  - mass (g)
  - year
  - latitude and longitude (decimal format)
- Format and access: RDF (+ others), no SPARQL endpoint

Research questions

Research Questions:

- **RQ1** - Can Semantic Web Technologies together with visualization techniques provide support to the Data Analysis of the NASA Dataset Meteorite?
- **RQ2** -Which are the advantages of providing our dataset with a "semantic description"?
- **RQ3** - Can we integrate our dataset with other data from the LOD cloud? Can we perform the integration by relying on a federation of SPARQL Endpoints?

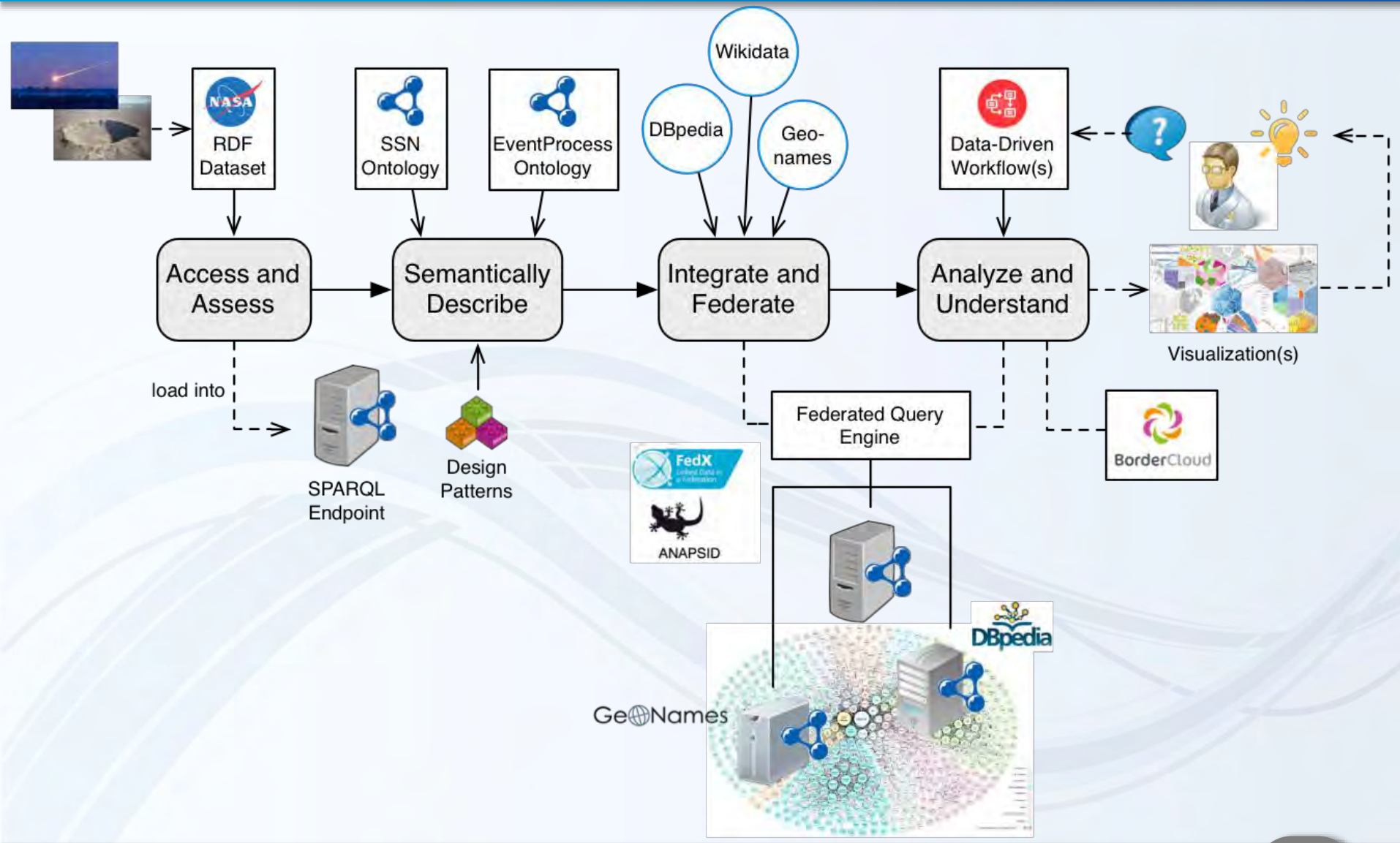
DEMO Video

Video with Google Earth showing the capacity of scientists to visualize the data about the NASA Meteorites Dataset

Data comes from the integration of NASA, Wikidata, and DBpedia.

Data workflows that relies on federated query engines and visualization techniques

Overall Approach



Visualization of the Results

NASA Dataset query

Wikidata (query)

DBpedia (query)

Lessons Learned

- Semantic Web Technologies can be used to integrate data from different data sources (**RQ1, RQ2**)
  - viable solution for providing scientists with powerful data analytics & visualization tools, beyond RDBMS-based approaches
- Data quality and interoperability issues limited the possibility of linking the NASA dataset to available Open Data

Future Work

- In the future (**RQ3**):
  - Link the NASA dataset to DBpedia and Geonames
  - Exploit links in Data Workflows, particularly in the visualization component
  - Develop crowdsourcing techniques to enhance the quality of NASA dataset, e.g., meteorite data with the objective to calculate the trajectory of the meteorite landing
  - Link the Nasa dataset with the future dataset of FRIPON