



UKRAINE INVASION — EXPLAINED

Satellite images show 40-mile-long Russian military convoy nearing Kyiv

February 28, 2022 - 10:31 PM ET



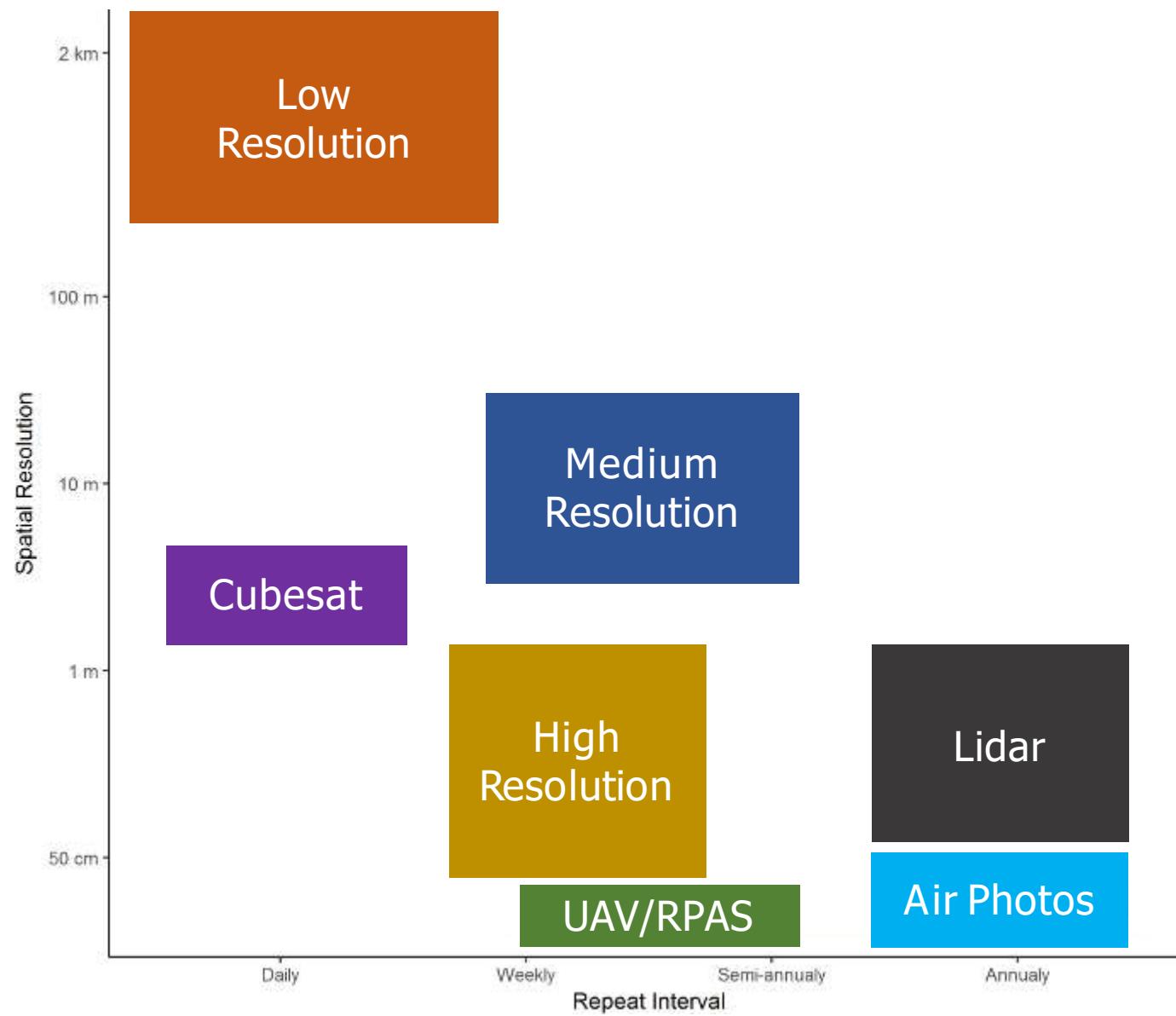
NICOLE WERBECK

High spatial and temporal resolution remote sensing: Cubesats and RPAS

GEOG 457

Alexandre.Bevington@gov.bc.ca

March 7, 2022



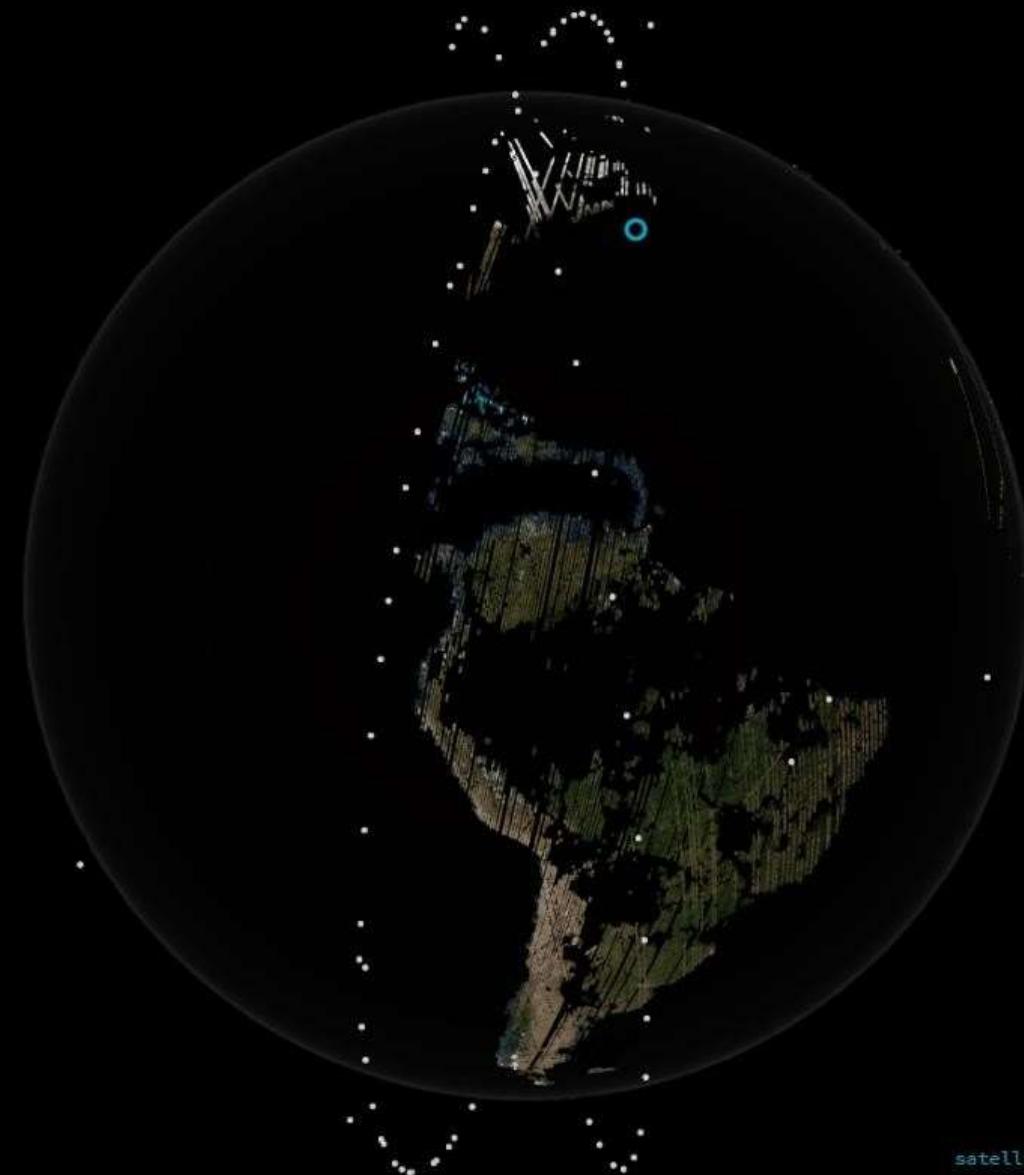
Cubesats

- Pros
 - Fast construction (<2yrs)
 - Low cost
 - Simple tech
 - Simple design
 - No space debris (burn up on re-entry)
- Cons
 - Limited payload capacity
 - Short duration (3-12 months)



<https://www.asc-csa.gc.ca/eng/satellites/cubesat/what-is-a-cubesat.asp>

Thu Jan 25 2018 15:16:21 UTC



satellite | 102F

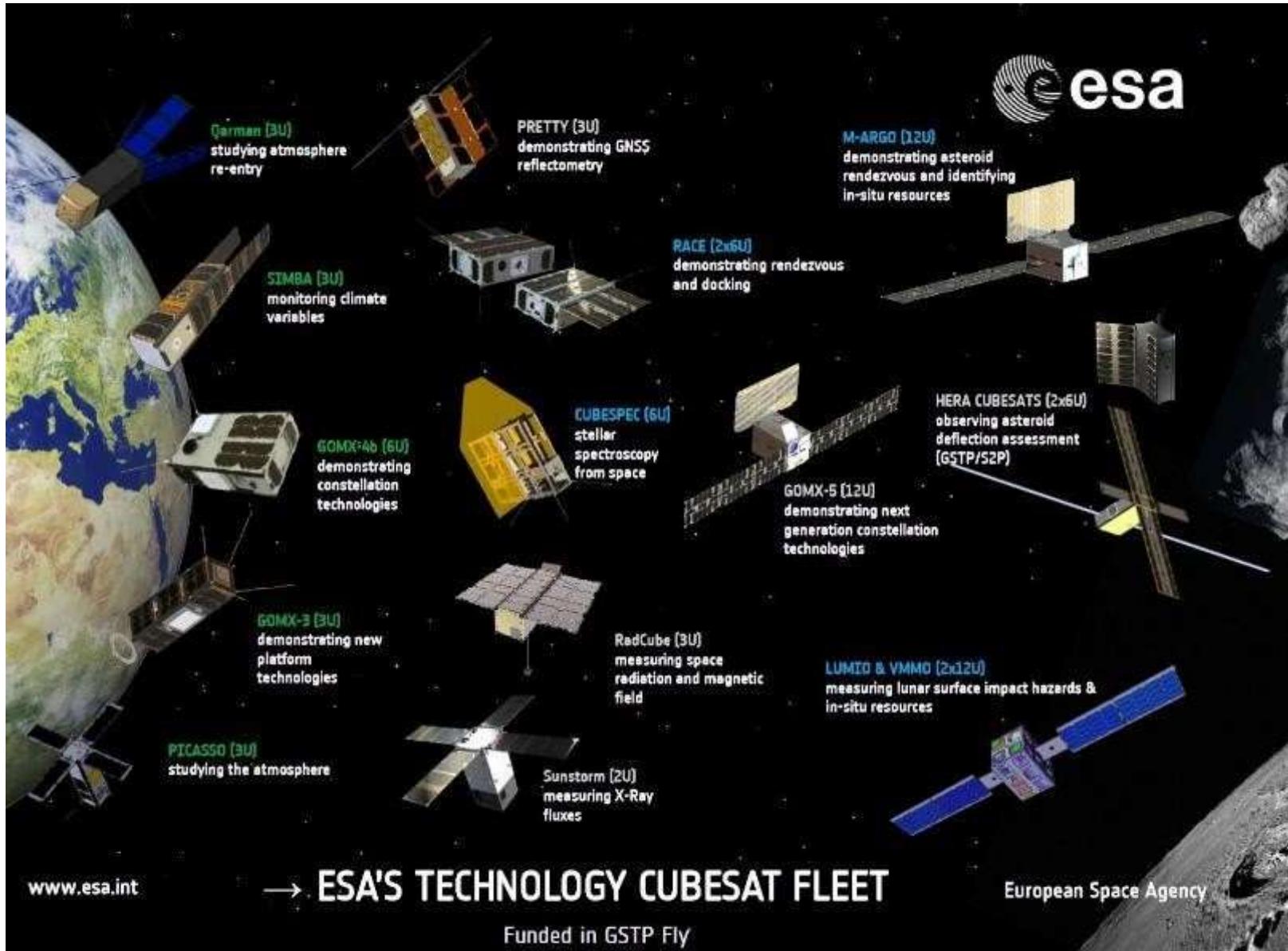
44° N, 89° E

height: 500 km
speed: 7.62 km/s

Why do you need daily information?

Not just EO

- Atmosphere/Climate
- Communications
- Asteroid
- Planetary
- ...



Main EO players

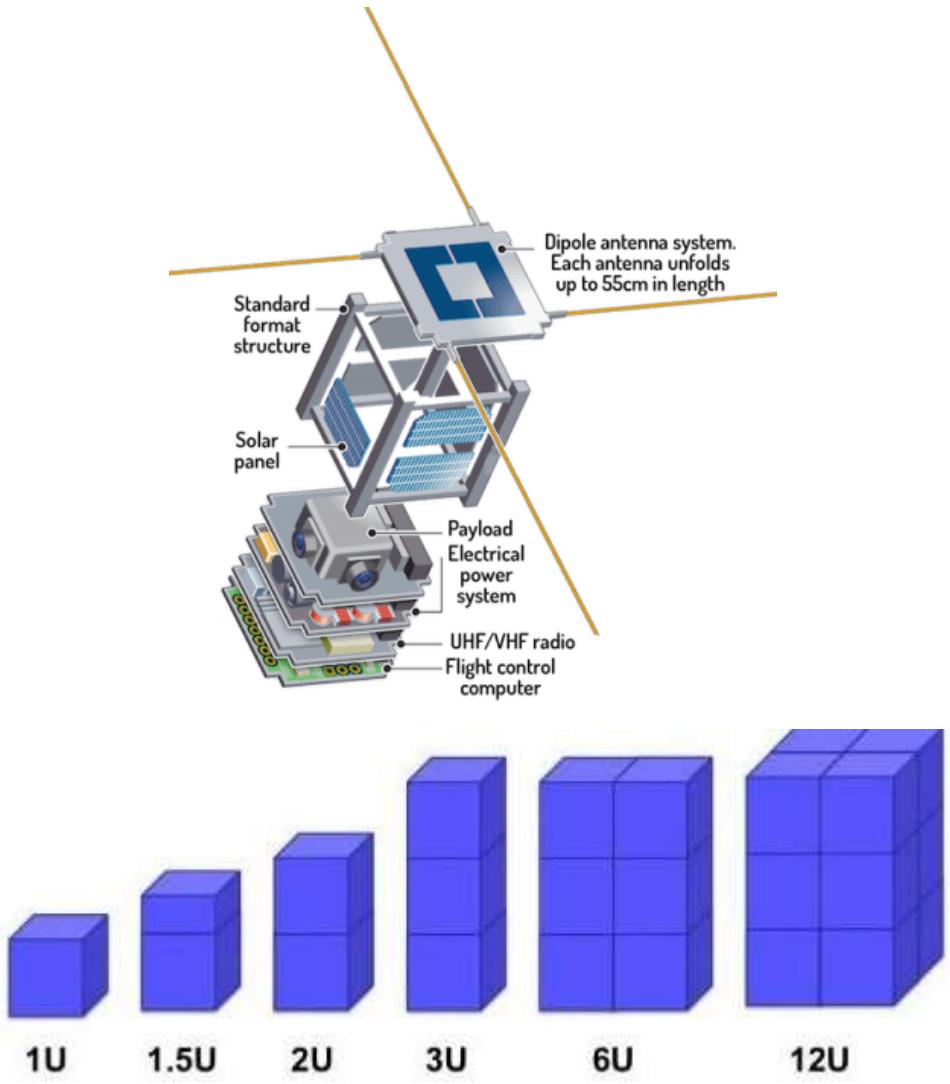
Planet (Optical) >200 (continuous)

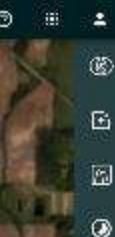
Capella (SAR) <50 (tasked)

IceEye (SAR) <20 (tasked)

Rank	Company	Co-Founder	Revenue	Employees	Funding	Website
1	planet.	Will Marshall Co-Founder & CEO	\$210M	720	\$624.6M	View Profile
2	Orbital Insight	Asaf E. Ofir	\$670K	145	\$36.2M	View Profile
3	GeoDataSource	David L. Thompson CEO	\$610K	5	\$58.4M	View Profile
4	MAXAR	Donald Johnson President & CEO	\$51M	4,400	\$1.8B	View Profile
5	SATELLLOGIC	Peter Kornbluh Co-Founder & CEO	\$212M	820	\$227M	View Profile
6	UrtheCast		...	127	\$24.7M	View Profile
7	Skybox		...	125	\$10.2M	View Profile
8	AXELOSPACE	Greg Thielmann President & CEO	\$210M	82	\$55.8M	View Profile
9	ASTRO OPTIC	Chris Gulyas Co-Founder & CEO	\$200K	25	\$40.2M	View Profile
10	CAPE	John P. Winters Co-Founder & CEO	\$10.0K	80	\$20M	View Profile
11	GSI geospatial	Paul Winters CTO	\$970K	75	\$1.2M	View Profile







Monthly





planet.

2020.09.07

© Planet Labs, Inc.

SuperDove is a high resolution mapping mission with SPOT-5-class resolution with the spectral coverage of SENTINEL-2 **plus**

- 2° max elevation orthophotos
- daily revisit today
- full effective FOV
- true 1-day revisit
- low stray light
- 2X NIR QE



SENTINEL-2

~750km
10° incidence
12-60m GSD
9-bands
5-day revisit
(15-day effective)

SPOT-5

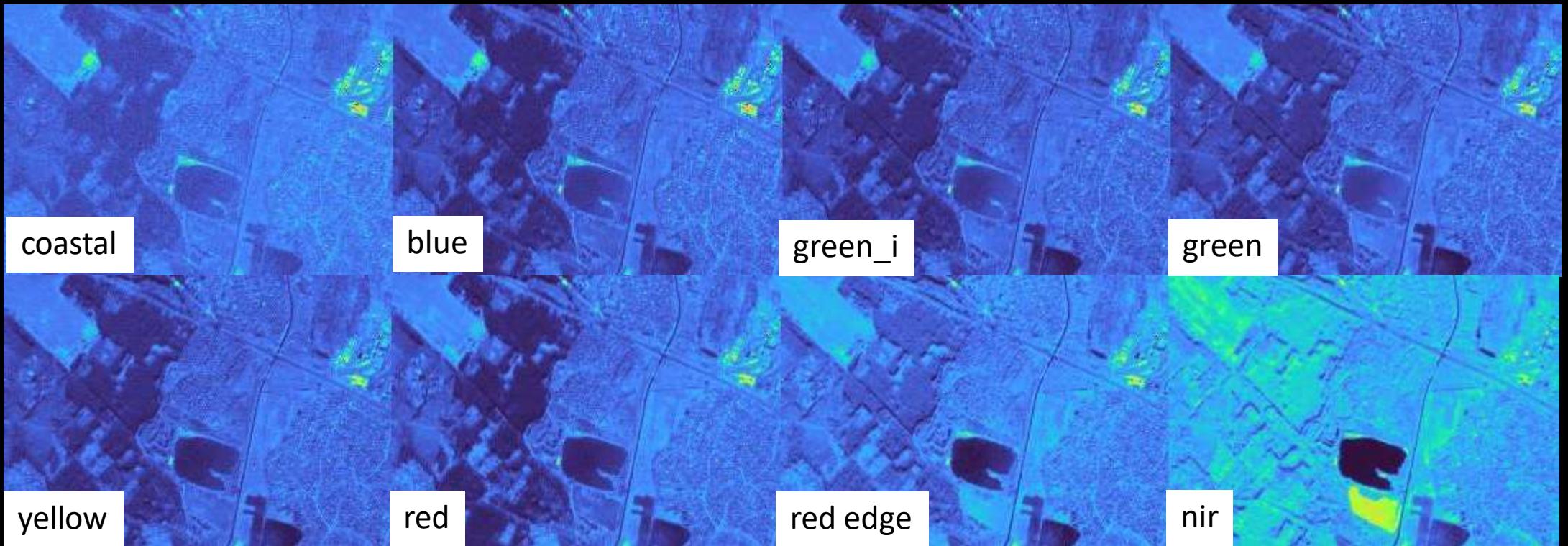
~800km
0-27° incidence
2.5-5.0m GSD
4-bands

SuperDove

~500km
2° incidence
3-12m GSD
8-bands
1-day revisit

Dove-R

~500km
1.5° incidence
3m GSD
4-bands
1-day revisit



PlanetScope 8-band Super Doves



Planet API and Cloud Processing

2016-08-18

- Direct cloud storage
 - Amazon S3, Microsoft Azure, Google Cloud Storage, Oracle Cloud Storage
- Cloud raster tools
 - **Clip**
 - **TOAR**
 - **Tile**
 - **Composite**
 - **Reproject**
 - **Band Math**
- Cloud services
 - No need for your own cloud infrastructure
 - Faster bulk activation and delivery
 - Support of cloud-to-cloud workflows
 - Reduced cloud costs

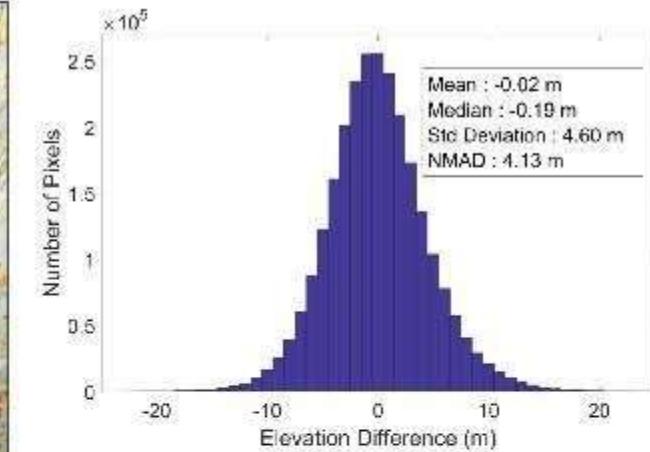
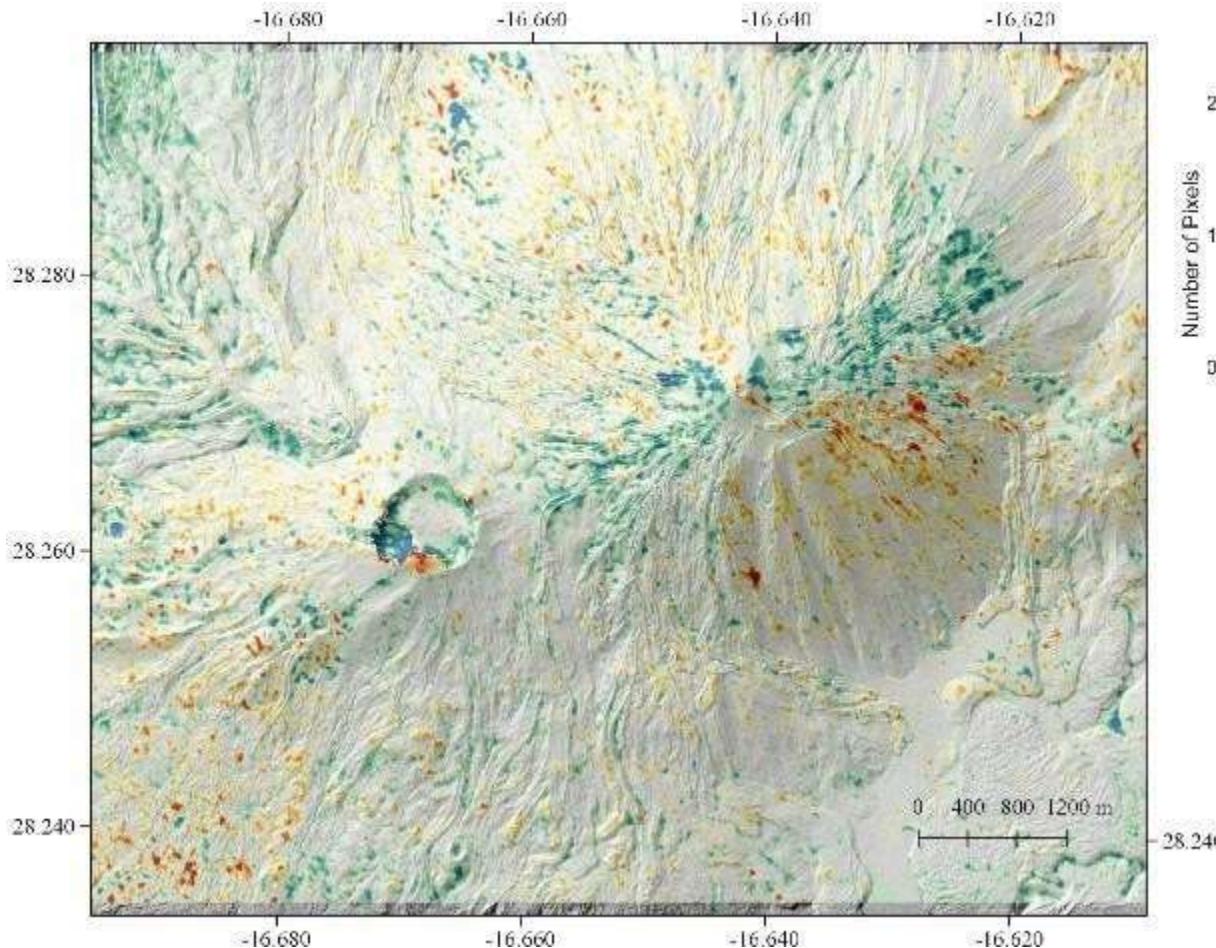


Article

DEM Generation from Multi Satellite PlanetScope Imagery

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Phenology of short vegetation cycles in a Kenyan rangeland from PlanetScope and Sentinel-2

Yannick Fagard, Antonio Sánchez-Gómez, Michaela Linsenmaier, Michaela Schmid, Luca Cescatti, ...

