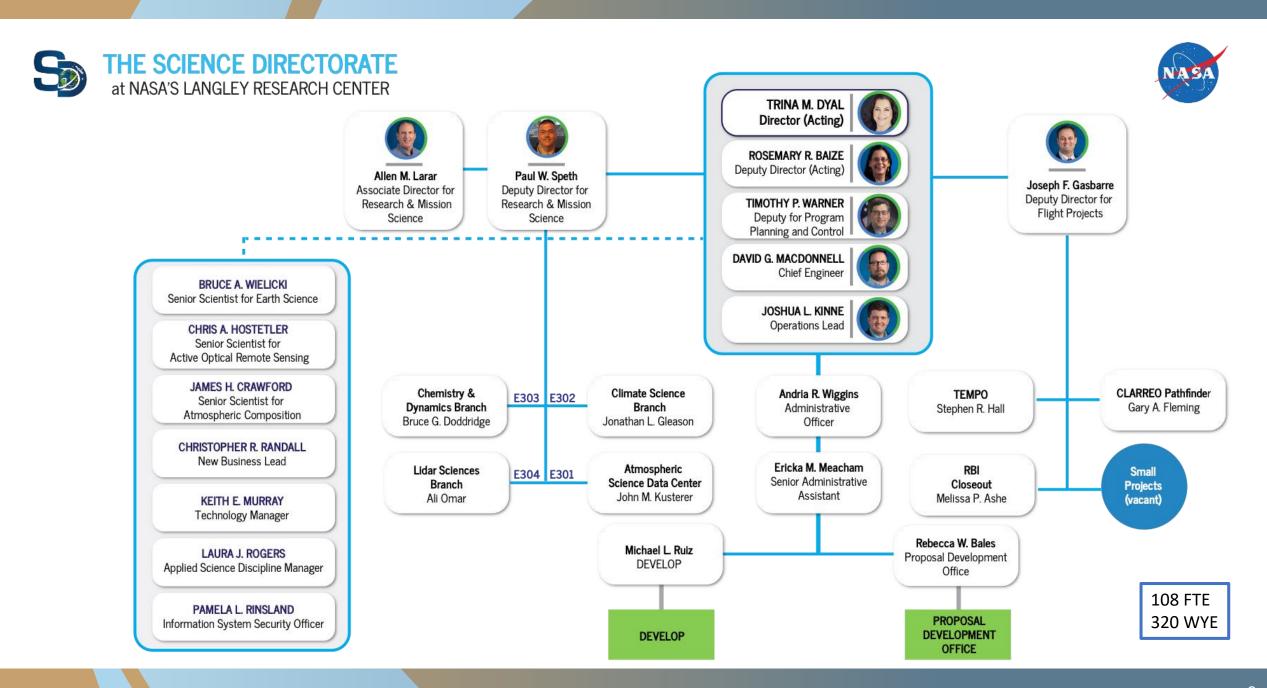
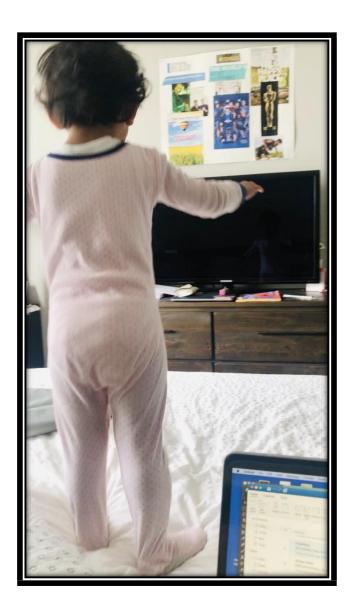


#### **AGENDA**

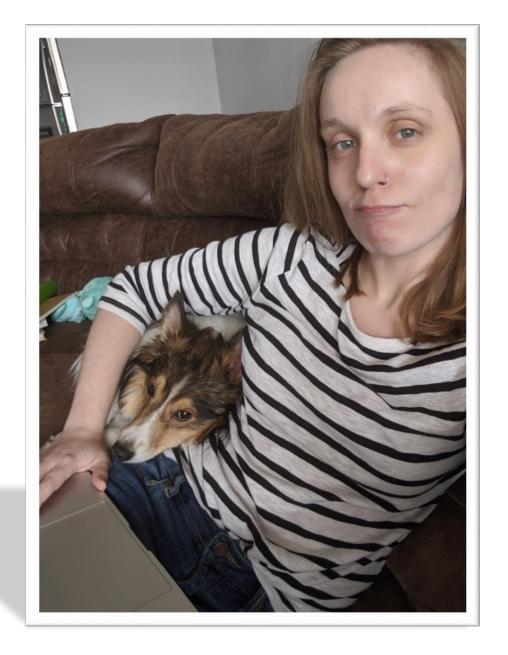
- Science Directorate Big picture
  - Org chart who is sitting at the table
- Our People
  - How we are coping with a pandemic
- Our Products
  - What we do just a reminder
- > HQ intel
- > RTOW Status
- Family Budget
  - Hunger Games
- Opportunities
  - Rise of the Mockingjay



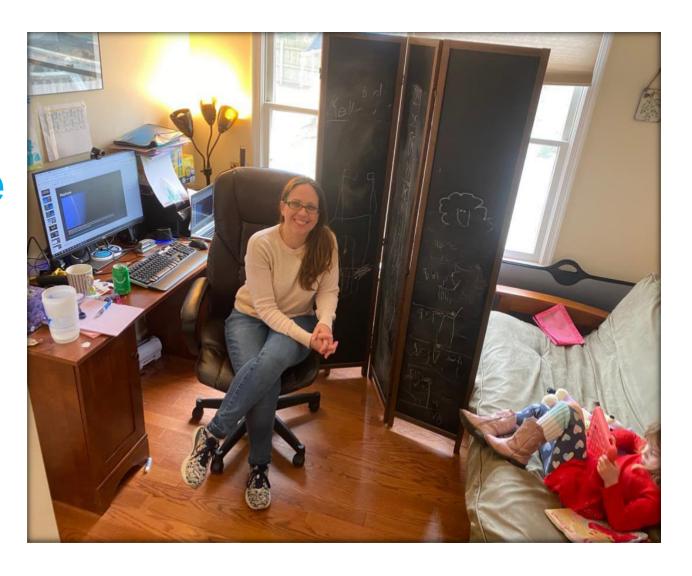
# Behind the scenes when Aimee is muted



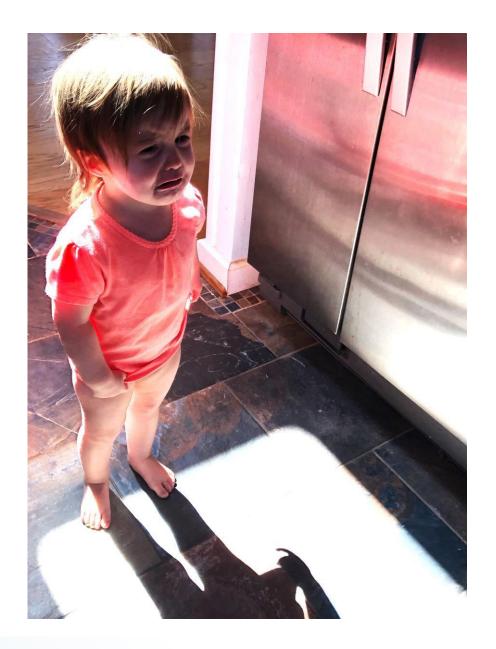
Erin knows the best way to make it through this struggle is with lots of snuggles.



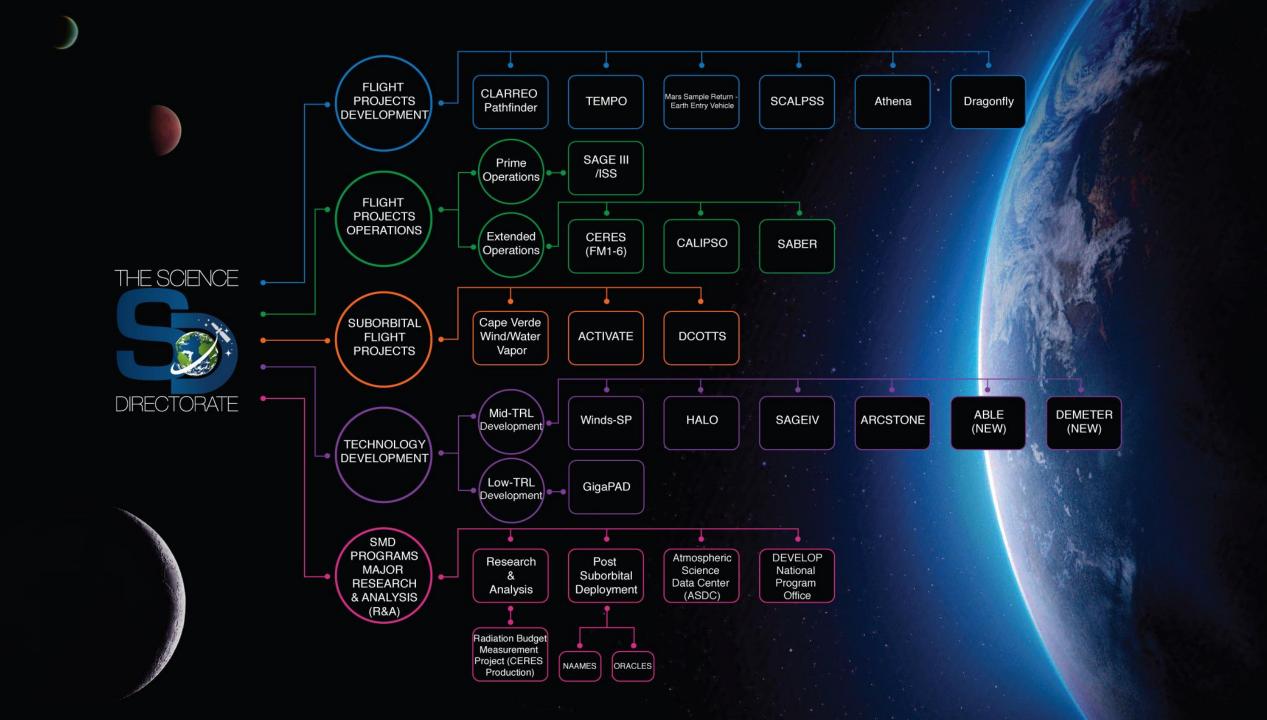
Marile's cozy office with options to lounge, teach or cuddle

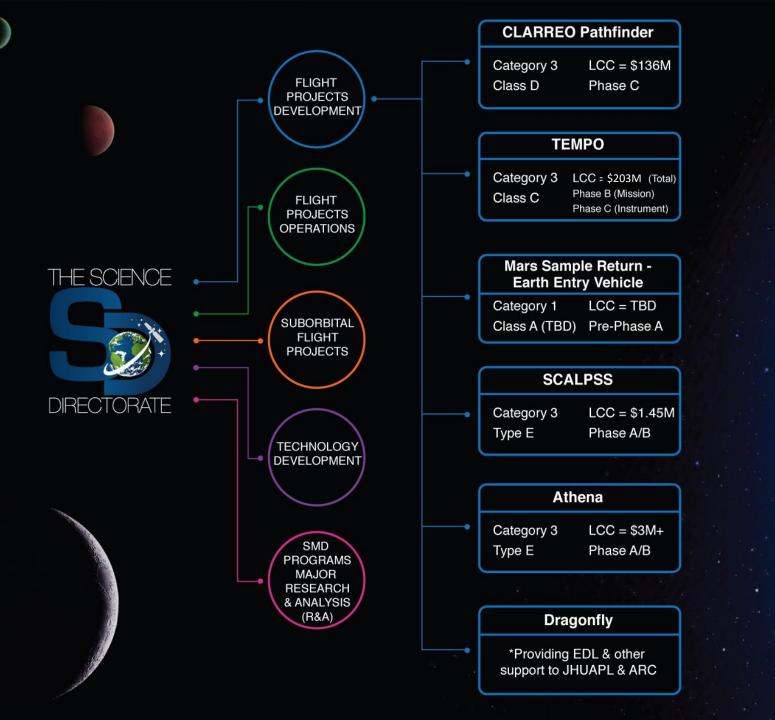


Tiffany was able to capture the entire essence of telework life in this one picture









## HQ Intel on COVID-19 impacts

- Prioritized missions in a Division portfolio should be adjusted to acceptable cost and schedule reserves to accommodate mission-specific COVID impacts. This applies to both PI-led and directed missions
- The programmatic adjustments of all missions within a Division portfolio should be covered without unduly reducing program content
  - Priorities defined by the Decadal Survey
  - Mission timing and cadence may change
- The SMD R&A program shall be protected from flight program COVID impacts as this program has its own challenges that put it under pressure
- It may be necessary to terminate or delay current or planned missions to arrive at such a portfolio solution

# HQ Intel on COVID-19 impacts

- The SMD R&A program shall be protected from flight program COVID impacts.
- SMD will focus on missions launching before the end of 2021 ('fly out"), missions in Phase C/D, missions with planetary launch windows, decadal survey missions with highest priority, and coordination of schedules among co-manifested missions.

TEMPO CPF

- If necessary, to accommodate impacts within a portfolio planning budget, SMD will consider delaying the ramp-up of future missions and delaying the start of new missions. No new missions may be initiated without SMD level approval of a portfolio solution accommodating COVID impacts
  - This includes issuing Announcements of Opportunity (AOs), issuing Formulation Authorization Documents (FADs), forming Science and Technology Definition Teams (STDTs), making commitments to partners, making Step 1 selections, making Step 2 down-selections

### SD RTOW Project Approval Status

Step 9: Project ATP

- SD-Mission OperationsSD-CLARREOfor on-orbit assetsSD-MSR EEV (Phase 1)
  - SD- ASDC
- SD-Mars 2020 EDL Ops
- SD-SCALPSS
- SD-ACTIVATE

Step 7-8: Center & Mission Directorate Approval (but not scheduled)

SD-Dragonfly – 14x22

Step 4-6: Plans Under Review

- SD-ACCP HSRL
- SD-MSR EEV (Phase 2)
- SD-Dragonfly VST

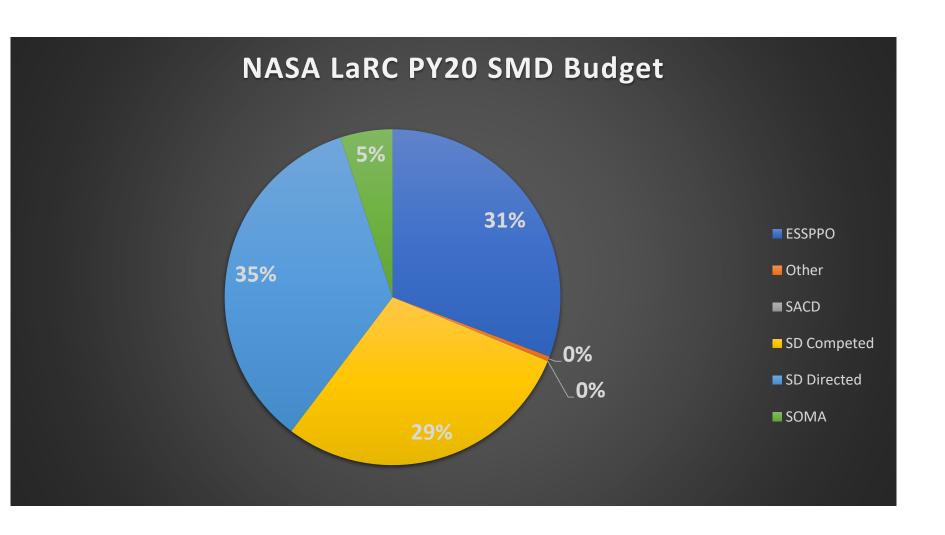
Step 2 & 3: Detailed Project Plan & Preparation

- SD-SAGE IV
- SD-Athena
- SD-ARCSTONE

**Step 1: Candidates** 

ALL Others

# NASA Langley SMD Budget



SMD represents 26% of LaRC's budget in FY20

36% of SMD funding at LaRC represents Agency functions (SOMA and ESSPPO)

#### Note:

- SMD funding represented ~ 30% of LaRCs budget
- SD Competed = 11%
- SD Directed = 21%

#### **Near Term Opportunities PWin**

| Near | Competed  | PWin             | ROI to<br>Center |    |
|------|---|------------------|------------------|----|
|      | EV-M3 (\$150M) OPAL 2 – Likely over the cost cap.   | <del>5%</del>    | \$60M            |    |
|      | EV-I6 (\$30M). Compact lidar/polarimeter for small sat call. Assume polarimeter is contributed. (Q1 2021) | 10% 2021         | \$6-9M           | #3 |
|      | Explorer-1 (\$350M). Need to mature Winds SP and PBL related concepts. Facility Class Winds Airborne.     | 5% 2021          | \$100M-<br>150M  | ?  |
|      | Earth Venture Suborbital-4. Submit multiple mature concepts. (Q4 2021)                                    | 75% 2022         | \$10M            | #4 |
|      | SAGE-IV Constellation   | 50% 2021         | \$15M            | #2 |
|      | Directed  | PWin             | ROI              |    |
|      | ACCP Lidar (\$150M) – Likely to be in Phase II and not Phase I.   | Pwin 2024<br>30% | \$75M            | #1 |
|      | Follow-on to CPF or TEMPO   | TBD              | TBD              |    |
|      | Add-on for SBG - Arcstone   | 25%              | \$15M            |    |

Other Opportunities: Arcstone, Athena, Etc.

#### **Leads & Opportunities**

| А                 | В  | С  | D   | E  |  | G   | Н  | I              | L  |  |
|-------------------|--|--|---|--|--|---|--|----------------|--|--|
|                   |  | Lifecycle  |   |  |  |   |  |                |  |  |
| Name              | Opportunity  | Phase  | Customer  | CY AO Release  | Valu   | ie (\$M)  | Pwin   | Capture Lead   | Notes                                    |  |
|                   |  |  |   |  |  |   |  |                | Dependent on funding of MDO (Mission     |  |
| SAGE IV           | MDO  | Pursue   | ESD/ESTO  | NA   | \$   | 18.0  | 50%  | Mike Obland    | Demonstration of Opportunity)            |  |
| CAPSULE           | EVI-6  | Pursue   | ESD/ESSP  | 4th QTR 2020   | \$   | 110.0   | 5%   | У              | LIDAR and polarimeter                    |  |
| ARCSTONE          | INVEST   | Pursue   | ESD/ESTO  | 4th QTR 2020   | \$   | 6.0   | 10%  | Costy Lukashin | Lunar Spectral Irradiance                |  |
| ACCP Lidar        | Directed   | Pursue   | NASA HQ   | NA   | \$   | 200.0   | 50%  | Chris H        | Directed lidar for ACCP DO mission       |  |
| Shadow Chaser     | SIMPLEX/VSG  | Interest   | PSD   | 2nd QTR 2021   | \$   | 55.0  | 5%   | Chris R        | Planetary occultation - Kunio Sayanagi   |  |
| Ocean lidar       | EV-S   | Interest   | ESD   | 3rd QTR 2021   | \$   | 35.0  | 25%  | Chris H        | PI- Mike B                               |  |
| HAMAQ             | EV-S   | Interest   | ESD   | 3rd QTR 2021   | \$   | 35.0  | 25%  | Jim C          | Air quality mission, Jim C PI?           |  |
|                   |  |  |   |  |  |   |  |                | NIR NO cubesat study with option for     |  |
| NICEcube          | H-FOS  | Interest   | Helio   | 1st QTR 2021   | \$   | 1.0   | 5%   | Marty M        | hardware                                 |  |
| 3D Wind lidar     | EV/Exp/NOAA  | Prospect   | ESD/NOAA  | ?  | \$   | 200.0   | 5%   | Chris Bedka    | Is this a better fit with NOAA?          |  |
| DIAL lidar        | PBL/Exp/Inc  | Prospect   | ESD   | ?  | \$   | 200.0   | 5%   | Amin Nehrir    | Expect PBL to be future DO               |  |
| TBD EVS           | EV-S   | Prospect   |   |  |  |   |  |                |  |  |
| CHARISMA          | ??   | Prospect   | Planetary   |  |  |   |  |                | Reviewed well                            |  |
| Landsat Follow On | SLI  | Prospect   | USGS  | NA   | \$   | -   | 0%   | Yolanda S      | CPF for Landsat cross calibration        |  |
|                   |  |  |   |  |  |   |  |                | Collaboration with GSFC, O2 Differential |  |
| DiBAR             | IIP  | Prospect   | ESTO  | 2nd QTR 2021   | \$   | 6.0   | 5%   | Bing Lin       | Absorption Barometric Radar              |  |
| DAVINCI+          | Discovery  | Phase A  | Planetary   | NA   | \$   | 0.5   | 50%  | Ron Merski     | EDL effort to support DAVINCI+           |  |
| VERITAS           | Discovery  | Phase A  | Planetary   | NA   | \$   | 0.5   | 50%  | Ron Merski     | EDL effort to support VERITAS            |  |
|                   |  |  |   |  |  |   |  |                |  |  |
|                   |  |  |   |  |  |   |  |                |  |  |
|                   |  |  |   |  |  |   |  |                |  |  |
|                   | AGE IV CAPSULE ACCP Lidar Chadow Chaser Ocean lidar HAMAQ NICEcube BD Wind lidar DIAL lidar BD EVS CHARISMA Landsat Follow On DIBAR DAVINCI+ | AGE IV  CAPSULE EVI-6 INVEST ACCP Lidar Chadow Chaser Chadow Chad | AGE IV MDO Pursue CAPSULE EVI-6 Pursue CAPSULE INVEST Pursue CACCP Lidar Directed Pursue Chadow Chaser SIMPLEX/VSG Interest Cocan lidar EV-S Interest CAMPAC EV-S Interest COCAL INTEREST | Name Opportunity Phase Customer  Discovery Phase Customer  ESD/ESTO  Pursue Customer  ESD/ESSP  ESD/ESSP  Pursue Customer  Cus | Lifecycle Phase Customer CY AO Release  AGE IV MDO Pursue ESD/ESTO NA CAPSULE EVI-6 Pursue ESD/ESSP 4th QTR 2020 ARCSTONE INVEST Pursue ESD/ESTO Ath QTR 2020 ACCP Lidar Directed Pursue NASA HQ NA Chadow Chaser SIMPLEX/VSG Interest Docan lidar EV-S Interest ESD 3rd QTR 2021 HAMAQ EV-S Interest ESD 3rd QTR 2021 Interest ESD 3rd QTR 2021 ESD/ESD AND QTR 2021 ESD/ESD AND QTR 2021 ESD AND QTR 2021 ESD/ESD AND QTR 2021 ESD/ESD AND QTR 2021 ESD/ESD AND QTR 2021 ESD/ESD ESD/ESD ESD/ESD ESD/ESD ESD/ESD ESD/ESD ESD ESD/ESD ESD/ESD ESD ESD ESD ESD ESD ESD ESD ESD ESD | Lifecycle Phase Customer CY AO Release Value  AGE IV MDO Pursue ESD/ESTO NA \$ CAPSULE EVI-6 Pursue ESD/ESSP 4th QTR 2020 \$ CARCSTONE INVEST Pursue ESD/ESTO 4th QTR 2020 \$ CACCP Lidar Directed Pursue NASA HQ NA \$ Chadow Chaser SIMPLEX/VSG Interest PSD 2nd QTR 2021 \$ COCCAN Interest ESD 3rd QTR 2021 \$ COCCAN Interest ESD COCCAN INT | AGE IV MDO Pursue ESD/ESTO NA \$ 18.0  CAPSULE EVI-6 Pursue ESD/ESSP 4th QTR 2020 \$ 110.0  CARCSTONE INVEST Pursue ESD/ESTO 4th QTR 2020 \$ 6.0  CACCP Lidar Directed Pursue NASA HQ NA \$ 200.0  CHARGADOW Chaser SIMPLEX/VSG Interest PSD 2nd QTR 2021 \$ 55.0  CHARMAQ EV-S Interest ESD 3rd QTR 2021 \$ 35.0  CHARMAQ EV-S Interest ESD 3rd QTR 2021 \$ 35.0  CHARMAQ EV-S Interest ESD 3rd QTR 2021 \$ 35.0  CHARMAQ EV-S POSPECT ESD/NOAA ? \$ 200.0  CHARMAD EV-S POSPECT ESD ? \$ 200.0  CHARMAD PROSPECT ESD ? \$ 200.0  CHARMAD PROSPECT ESD ? \$ 200.0  CHARMAD PROSPECT ESD ? \$ 200.0  CHARMAD ? POSPECT Planetary POSPECT ESD | Lifecycle      | Lifecycle                                |  |

#### Science Directorate Annual Report

NASA Langley's Science Directorate has published its first-ever online Annual Report, which highlights our 2019 accomplishments and contributions to NASA, the Nation, and our global partners. The 2019 Science Directorate Annual Report is available online now at:



https://science-people.larc.nasa.gov/2019-annual-report