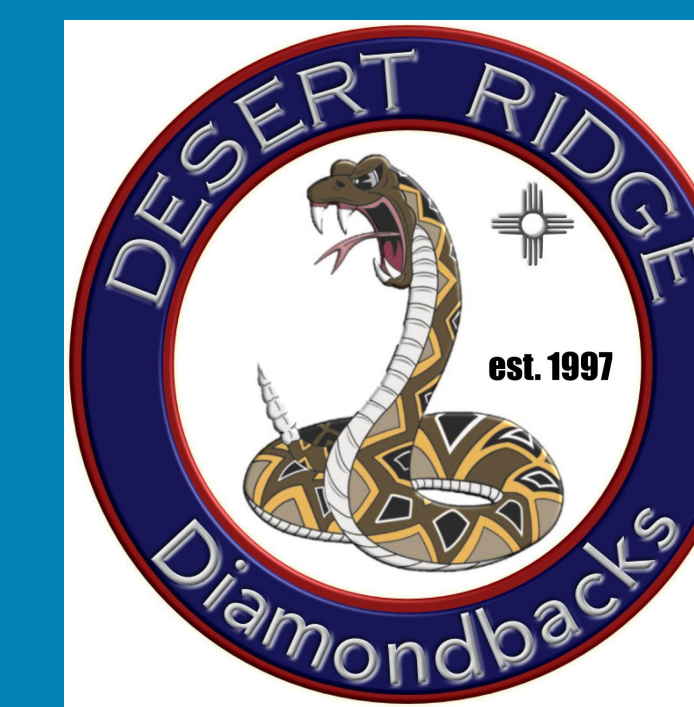




# THE INVESTIGATION OF HURRICANE IAN (2022) FROM ABOVE

Desert Ridge Middle School, Albuquerque, New Mexico



## BACKGROUND

We are investigating Hurricane Ian's damage on human settlements. VIIRS is the tool we are going to use, as it provides high-quality data that can be used for this kind of research. We think that coastal cities located near the Equator will receive less damage than other cities, because hurricanes do not enter the area around the Equator. We also expect to see that coastal cities with a warmer climate will receive more damage, as hurricanes will direct themselves toward warm water.

We have basic knowledge of hurricanes, including their minimum speed, various categories, and forming conditions. Storms must have a minimum speed of 70 mph to become a hurricane. Hurricanes also form in and follow warm water. We know that Ian was a category 3 hurricane that hit Florida on September 28. We also know that NOAA sends "hurricane hunters" into hurricanes to gather data on various conditions. Scientists use this data from NOAA and other sources to formulate models that predict hurricane paths.

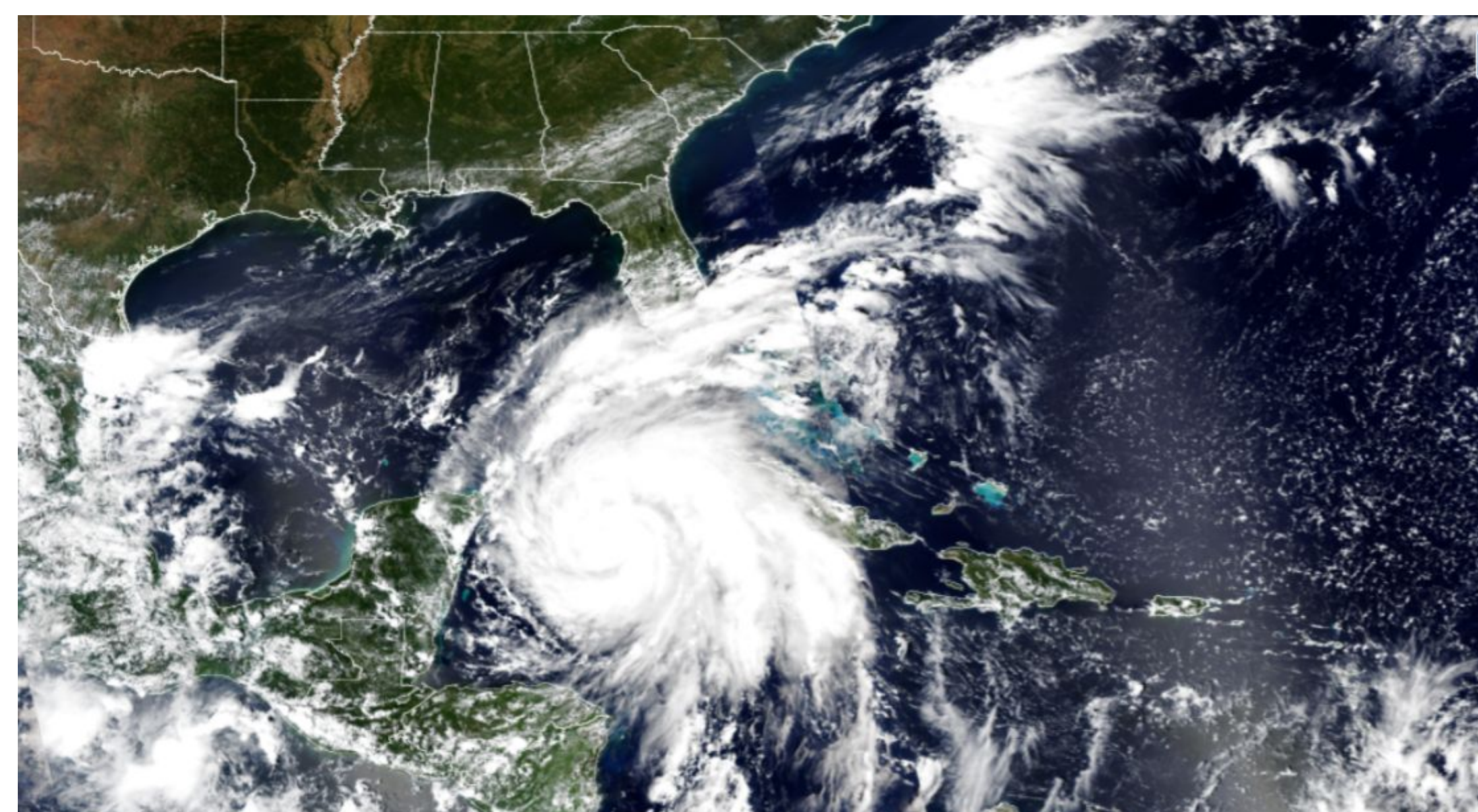
## REFLECTION

VIIRS allows us to observe Earth from above, letting us see a top-down view of the Earth's surface. This is very helpful, as hurricanes can not be observed easily in New Mexico. The VIIRS interface also stores images from the past, so one can "time travel" and see what the Earth looked like at the time of an event. This feature allowed us to view Florida both before and after Hurricane Ian. Finally, VIIRS comes with a variety of bands and filters showing other data (temperature, false color, etc.) that is not observable normally.

## RESEARCH with supporting VIIRS Satellite Images



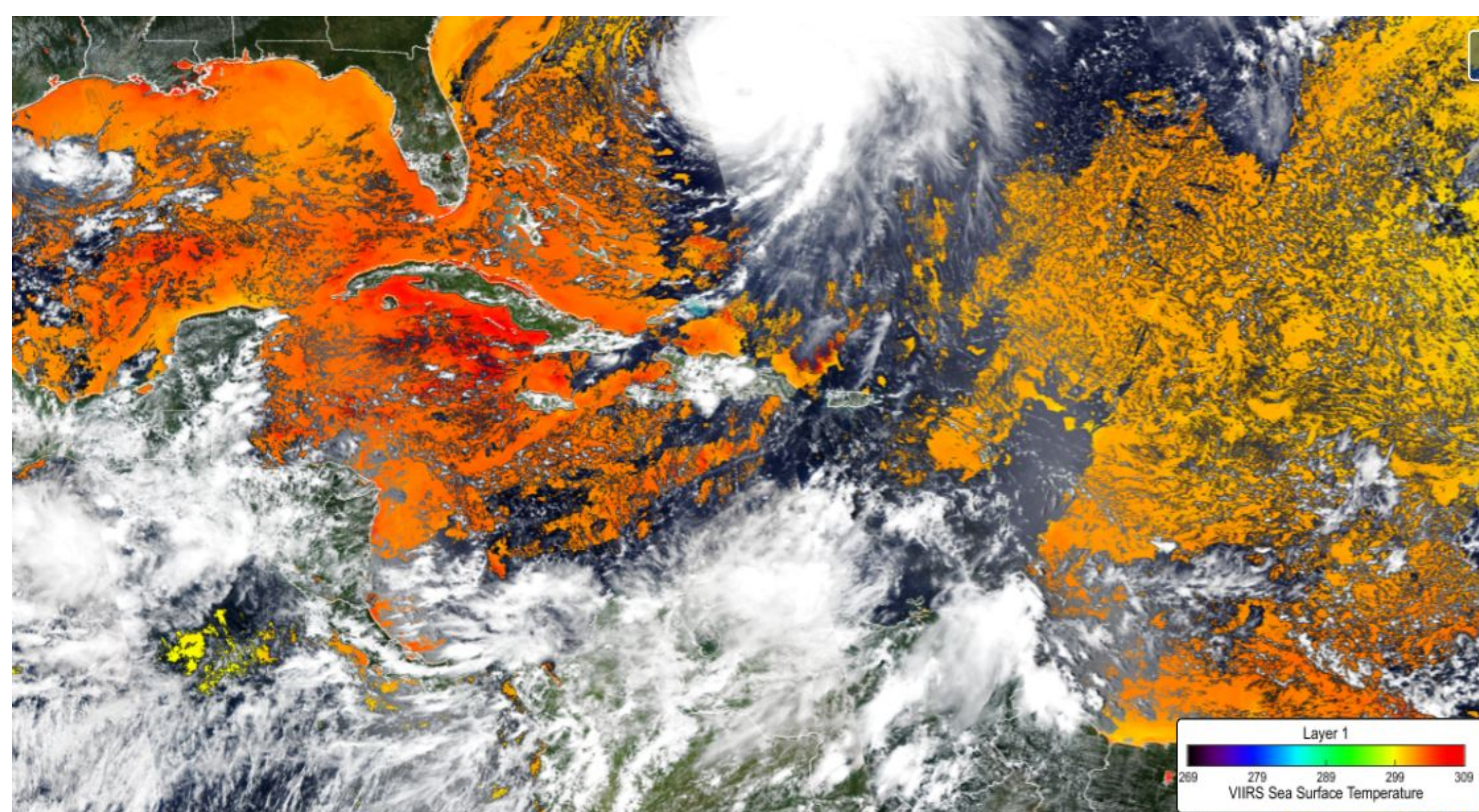
JSTAR MAPPER  
September 22 2022  
the Pacific Ocean



- JSTAR MAPPER
- September 26 2022
- Hurricane Ian hits Florida



- JSTAR MAPPER
- September 28 2022
- Ian over Florida



- JSTAR MAPPER
- September 2 2022
- Ian (storm on bottom) with a sea surface temperature filter applied

## RESULTS and CONCLUSIONS

We are investigating Hurricane Ian's damage with pictures from the JSTAR Mapper. Picture 1 (Sep 22) was taken at (-69.8589, 17.6062, zoom = 4.83) to observe the area around Hurricane Ian. Hurricane Ian can be seen by South America. Ian has not developed an eye and does not appear to be spinning in Picture 1. Picture 2 (Sep 22, -80.9935, 27.7656, zoom = 7.43) is a zoomed-in view of Picture 1. In Picture 2, we can see Florida, untouched by Ian. There is light cloud cover, as well as heavy vegetation. Picture 3 (Sep 22) is Picture 1 with a sea surface temperature filter applied to allow us to observe the areas with warmer water, which Ian will follow.

Picture 4 (Sep 26) (-82.8421, 20.8672). shows Hurricane Ian entering Florida. Ian is covering almost half of Florida in Picture 4. Some of the clouds are moving past Florida and approaching South Carolina, as well. Ian's eye, however, is not very clear in Picture 4. In Picture 5 (-79.4201, 27.9101, zoom = 5.96) on September 28 we can see that Ian appears to be spinning faster than before, with a more distinct eye. Ian's clouds are also extending across the eastern seaboard of the United States.

## THE VERY SCIENCE SCIENCE KIDS

- Frith, David
- Garcia, Tatiana
- Lu, Inler
- York, Emma

The JSTAR Mapper was used to access VIIRS:  
[www.star.nesdis.noaa.gov/jpss/mapper/](http://www.star.nesdis.noaa.gov/jpss/mapper/)