SCIENCE

Above: Lightning buff Jonathan Ho captured this shot on the night of April 17 near Tiong Bahru. Mr Ho said his interest in storm photography has made him more interested in meteorology. PHOTO: JONATHAN HO

Left: Recreational photographer James Gan snapped this photo on the night of April 16 near Bedok. He said anyone can participate in storm chasing using the National Environment Agency's myENV mobile app. PHOTO: JAMES GAN

STORM CHASERS

Shutterbugs are having a field day with high levels of lightning activity this month

Gena Soh

Singapore has been experiencing frequent thunderstorms and startling bolts of lightning since the start of this month, and storm-chasing shutterbugs are having a field day.

While these storms and lightning may have scuttled many outdoor plans, some photographers like music director Simon Lim, 53, have welcomed them with glee.

High levels of lightning activity usually occur in Singapore during the inter-monsoon period, which happens twice yearly, between late March and May, and October and November.

Mr Lim, a recreational photographer, said: "Singapore is ranked top three in the world for lightning activity and we are blessed to be able to admire this phenomenon in a safe environment."

Pictures of spectacular lightning-lit skies have been shared widely on the Internet.

When lightning struck over the eastern parts of Singapore on April 17, Mr Lim was at the balcony of his 18th-storey home near Marine Parade at 8.40pm, his camera ready to capture the bright bolts in the sky.

In a span of 18 minutes, he snapped a series of shots of the purple night sky illuminated by lightning, capturing at least 40 bolts in his photos.

After he processed and blended the images into a single photo, he posted it on Facebook group CloudSpotting & SkySpotting Singapore the following day. To date, his picture has been shared about 3,800 times.

Mr Jonathan Ho, 45, another lightning buff from the Facebook group who chased the light show on April 17, said that his interest in storm photography has made him more interested in meteorology.

The professional photographer said: "In order to take better pictures, I've been constantly learning more about how storms form. This knowledge gives me time to get to my preferred locations and vantage points before a storm happens."

He added: "For example, storms don't build up slowly – they discharge fast, then taper off. So it's important to rush to a location when you see storm clouds building up."

Recreational photographer James Gan, 53, said that anyone can participate in storm chasing using the National Environment Agency's myENV mobile app.

The app gives information about the movement of stormy clouds over Singapore, among other things.

Mr Gan, an insurance agent, said: "Chasing and capturing these lightning storms can showcase the wonders of nature."

He added: "It is easy to do a set-up for lightning shots. Even an iPhone can get good videos and images."

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SHOWCASING NATURE

Chasing and capturing these lightning storms can showcase the wonders of nature... It is easy to do a set-up for lightning shots. Even an iPhone can get good videos and images.

RECREATIONAL PHOTOGRAPHER JAMES GAN

This composite photo was done by recreational photographer Simon Lim, who snapped a series of shots in a span of 18 minutes on the night of April 17 near Marine Parade. Pictures of spectacular lightning-lit skies have been shared widely on the Internet. PHOTO: SIMON LIM

How lightning occurs

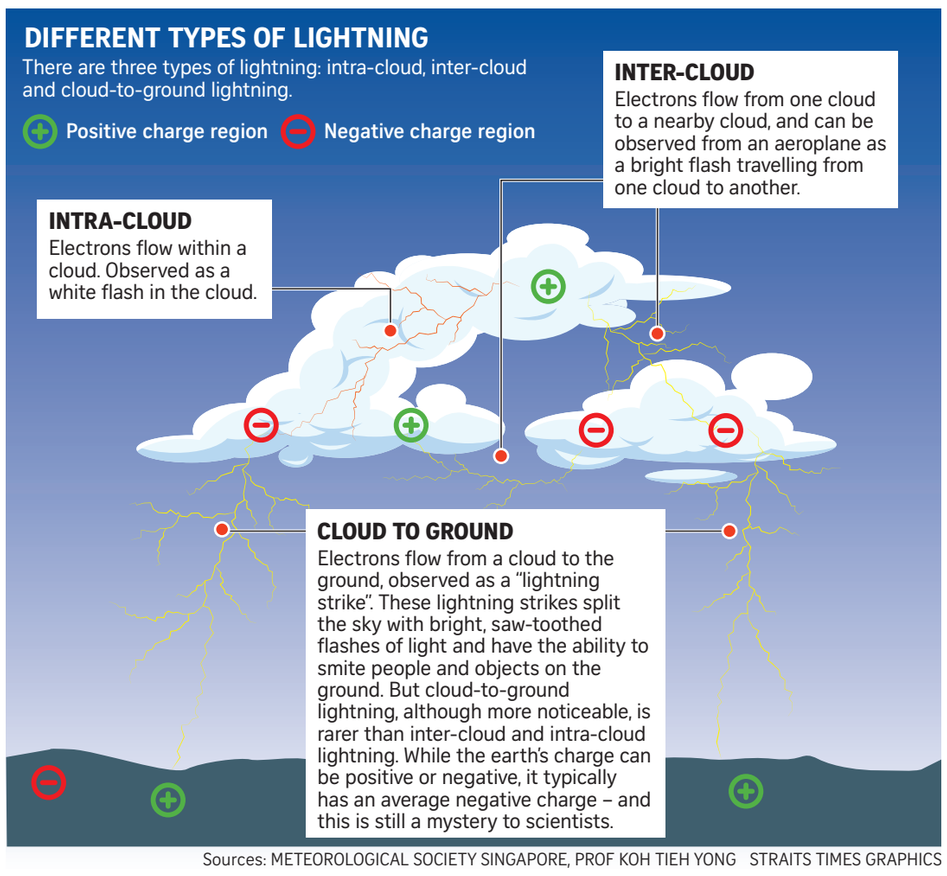
High levels of lightning activity usually occur during the inter-monsoon period, which happens twice yearly between late March and May, and October and November. The Meteorological Service Singapore said between 20,000 and 80,000 lightning strikes are typically observed in April alone. **Gena Soh** speaks to Associate Professor Koh Tieh Yong, a weather and climate scientist from the Singapore University of Social Sciences, on the science of lightning.

A FLOW OF ELECTRONS

- At high altitudes, snow sometimes forms within clouds. Snow is coated by cooled water to form a kind of water-ice mixture known as graupel.
- When turbulent winds, like the ones that Singapore tends to experience during the inter-monsoon period, blow through the cloud, they shake up the content within, much like a cocktail.
- The winds cause the graupel to collide violently with other ice crystals in the cloud, leading it to acquire or lose ions. This gives each individual graupel particle and ice crystal either a net positive or negative charge.
- As denser graupel settles at the bottom of each cloud, different parts of the storm cloud may acquire negative and positive overall charges.
- When sufficient charge has accumulated in different regions, electrons will flow from a negative to positive region. This movement of electrons from a negative to positive region is lightning.

DIFFERENT TYPES OF LIGHTNING

There are three types of lightning: intra-cloud, inter-cloud and cloud-to-ground lightning.



Sources: METEOROLOGICAL SOCIETY SINGAPORE, PROF KOH TIEH YONG STRAITS TIMES GRAPHICS