

## Hon. Prime Minister Narendra Modi's call to #LightForIndia tonight at 9 pm *...Its Window of opportunity to act-*

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The coronavirus COVID-19 pandemic is the defining global health crisis of our time and the greatest challenge we have faced since World War Two. Since its emergence in India in March, the virus has spread to every state. Cases are rising daily in Maharashtra, Kerala and in Delhi. Our Govt is racing to slow the spread of the virus by testing and treating patients, carrying out contact tracing, limiting travel, quarantining citizens, and cancelling large gatherings such as sporting events, concerts, and schools. But COVID-19 is much more than a health crisis. By stressing every one of the countries it touches, it has the potential to create devastating social, economic and political crises that will leave deep scars. We are in uncharted territory. Many of our communities are now unrecognizable. Dozens of the India's greatest cities are deserted as people stay indoors, either by choice or by government order. Across the world, shops, theatres, restaurants and bars are closing. Every day, people are losing jobs and income, with no way of knowing when normality will return. Every State needs to act immediately to prepare, respond, and recover.

In my Previous Project I have done some experiment for slowing down the spread and for continuing regular routine..... Today according to situation I proposed another Solution...

### **How India can be Recover:** (Study conclusion from Taiwan and China's history)

- 1] Find Infected people (Either by testing all or Testing only with contact tracing)
- 2] Find Suspected Areas (From Where Corona infected people still exist)
- 3] Lockdown those areas only and create Unlockable cities list
- 4] wait for 14 days period (To check for appearance of +ve patient in Unlockable cities.)
- 5] if no patient is found then start regular routing in unlockable cities without disturbing locked cities.
- 6] if patient found then repeat step 2 to onward.

In above steps second step is important and difficult. As day by day infected persons are increasing. Contract tracing is also becoming difficult. Manual survey contain large lacks as people will not assist to surveyor. Also Manual Survey can take large time. Also People are shifted to their old location so existing election survey may have some limitation.

### How to tackle Second Steps...?

"Hon PM urges citizens to switch off lights, light lamp for 9 min at 9 pm on April 5."

- A. In those time if we capture the satellite image of India (IR / Thermal or any of the existing image capturing technique) then we will get exact people location within second..by using Image processing.
- B. We have corona positive patients data such as their location
- C. If we map Founded Patient location data on segmented light data from m satellite Image then it will give us cluster where Corona +ve patient Occurred.

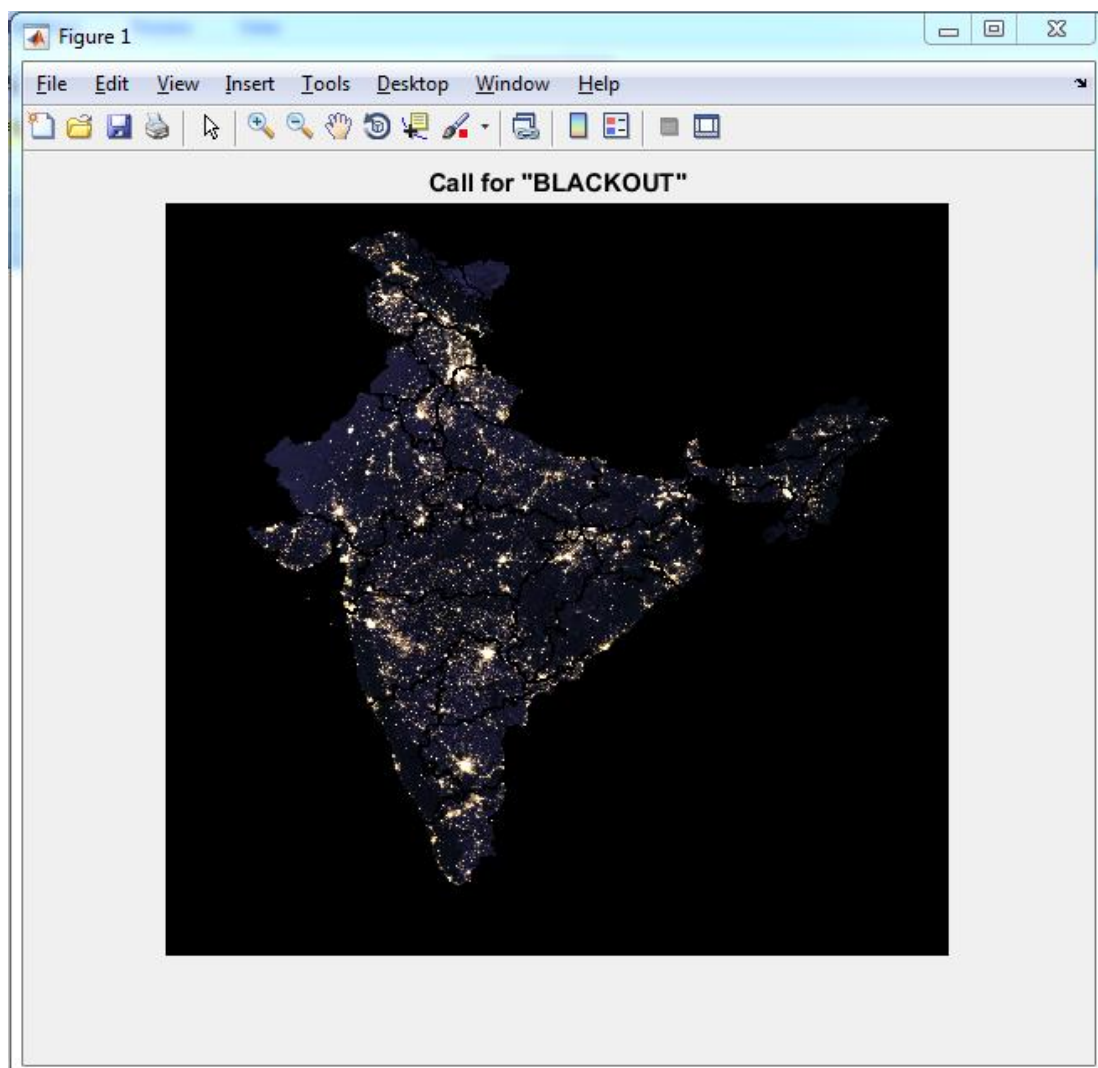
Thus within some hours we will get Suspected areas.

### Experiment:

To give state of proof to my Proposed work I implemented this on Satellite imagery of old date[1].

I used random location of corona +ve patient , as I didn't get those right now. After that I process light image in MATLAB to segment Light (i.e. Persons Location). I considered that all Other lights are off. Then by using some Morphological operations and basics of image processing I mapped those location to Corona Location. After Processing those I plot boundaries around those areas to lockdown this areas.

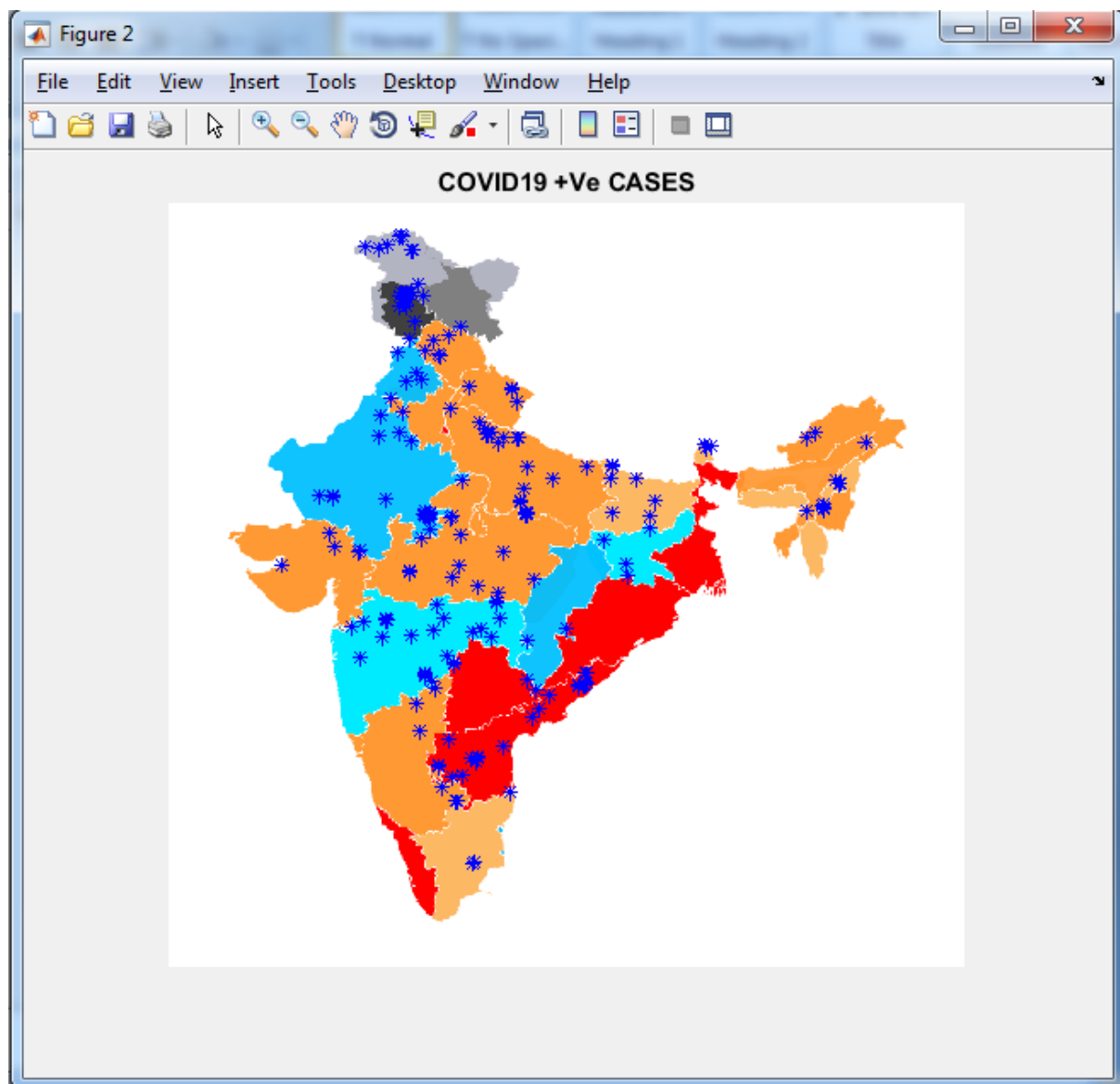
Remaining areas are considered as "Unlockable Areas" as I stated Previously.



*Figure(1) : India When BLACKOUT Occur & People came outside using some Light source*

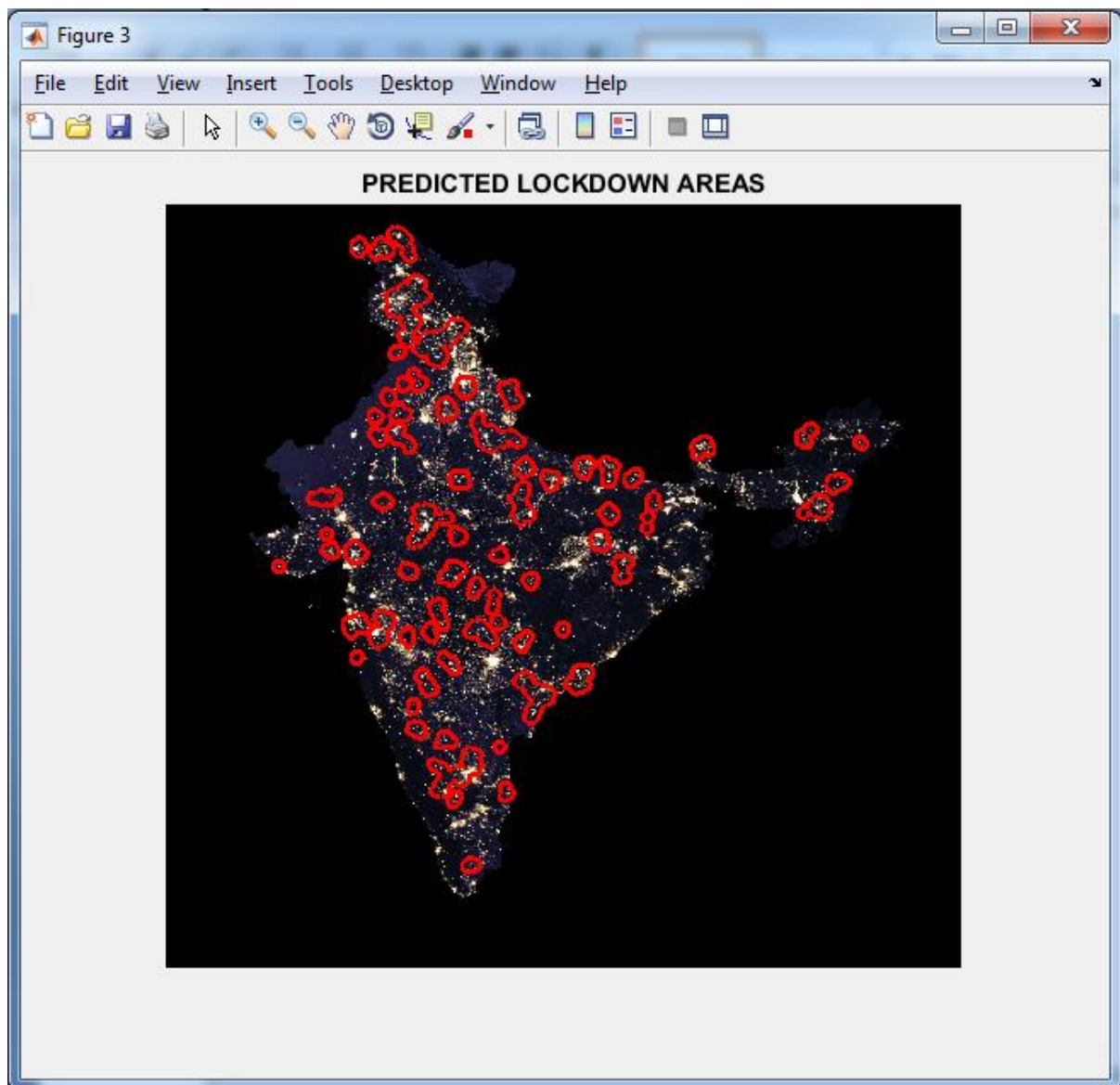
Note:(Actually image is different but for My experiment I considered it as above.)

Image Courtesy: Credit: NASA Earth Observatory images by Joshua Stevens, using Suomi NPP VIIRS data from Miguel Román, NASA's Goddard Space Flight Center [1]



*Figure (2): Statewise Corona +ve Patient*

Note: I didn't get exact Location. so For experiment we took random location.



*Figure (3): Predicted Lockdown areas (Marked with Boundaries)*

REFERENCES:

- 1] <https://www.nasa.gov/feature/goddard/2017/new-night-lights-maps-open-up-possible-real-time-applications>