

at the Phoenix PI meeting, it was clear that the DARPA sponsor wanted a single metric for comparing systems and approaches.

"All the News That's Fit to Print"

# The New York Times

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MONDAY, NOVEMBER 1, 1988  
NEW YORK, FRIDAY, NOVEMBER 4, 1988



Sen. Edward Brooke, facing a primary challenge in Rhode Island, speaks to a crowd of supporters in Providence. He is seeking a second term in office. Page 4.

### Registration Off Since 1984 Vote

Registration for the 1988 Rhode Island primary election is down significantly since the 1984 election. The state registrar reported that only about 10 percent of eligible voters had registered by the deadline. This is a sharp decline from the 1984 election, when nearly 40 percent of voters registered. The registrar attributed the low turnout to a combination of factors, including a lack of voter education and a general apathy towards the political process. The registrar also noted that the registration process is cumbersome and time-consuming, which may be discouraging voters from participating.



## Emotional Issues Are the 1988 Battleground

### 'Virus' in Military Computers Disrupts Systems Nationwide

A mysterious computer virus, which has spread to military systems nationwide, has disrupted operations at several major defense installations. The virus, which is believed to have originated in a computer system at a defense contractor, has caused significant damage to data and system files. Defense officials are working to contain the virus and prevent further spread. The virus is highly contagious and can be transmitted through network connections. It has caused widespread concern among defense officials, who are worried about the potential impact on national security. The virus has been found in systems at several major defense installations, including the Pentagon and several military bases. The damage caused by the virus is extensive, with many systems being taken offline for repairs. Defense officials are working to identify the source of the virus and to develop a way to remove it from the systems. The virus is believed to be a type of "worm" that can replicate itself and spread to other systems without the need for a user to execute a program. This makes it particularly dangerous, as it can spread quickly and easily. Defense officials are working to identify the source of the virus and to develop a way to remove it from the systems. The virus is believed to be a type of "worm" that can replicate itself and spread to other systems without the need for a user to execute a program. This makes it particularly dangerous, as it can spread quickly and easily.

### Commerce Dept. Is Said to Force Adjustment of 1990 Census Plus

The Commerce Department is said to be forcing a major adjustment in the 1990 census, which will affect the way in which the population is counted. The adjustment is believed to be a result of a dispute between the Commerce Department and the Census Bureau over the way in which the population is counted. The Commerce Department is arguing that the current method of counting the population is outdated and does not accurately reflect the current population. The Census Bureau is arguing that the current method is the most accurate and that any change would be a major disruption. The adjustment is believed to be a result of a dispute between the Commerce Department and the Census Bureau over the way in which the population is counted. The Commerce Department is arguing that the current method of counting the population is outdated and does not accurately reflect the current population. The Census Bureau is arguing that the current method is the most accurate and that any change would be a major disruption.

### PENTAGON REPORTS IMPROPER CHARGES FOR CONSULTANTS

The Pentagon has reported that several consultants have been charged with improper conduct. The charges are believed to be a result of a review of the Pentagon's consultant program. The review found that several consultants had been charged with improper conduct, including the misuse of government funds and the disclosure of classified information. The Pentagon is working to investigate the charges and to take appropriate action. The charges are believed to be a result of a review of the Pentagon's consultant program. The review found that several consultants had been charged with improper conduct, including the misuse of government funds and the disclosure of classified information. The Pentagon is working to investigate the charges and to take appropriate action.

### CONTRACTING CRITICIZED

Contracting practices in the defense industry are being criticized for being too expensive and inefficient. Critics argue that the current system of contracting is outdated and does not allow for the most efficient use of resources. They argue that the current system is based on a "cost-plus" model, which allows contractors to charge whatever they want for their services. This is believed to be a major cause of the high costs of defense contracts. Critics are calling for a reform of the contracting process, which would allow for more competition and more efficient use of resources. They argue that the current system is based on a "cost-plus" model, which allows contractors to charge whatever they want for their services. This is believed to be a major cause of the high costs of defense contracts.

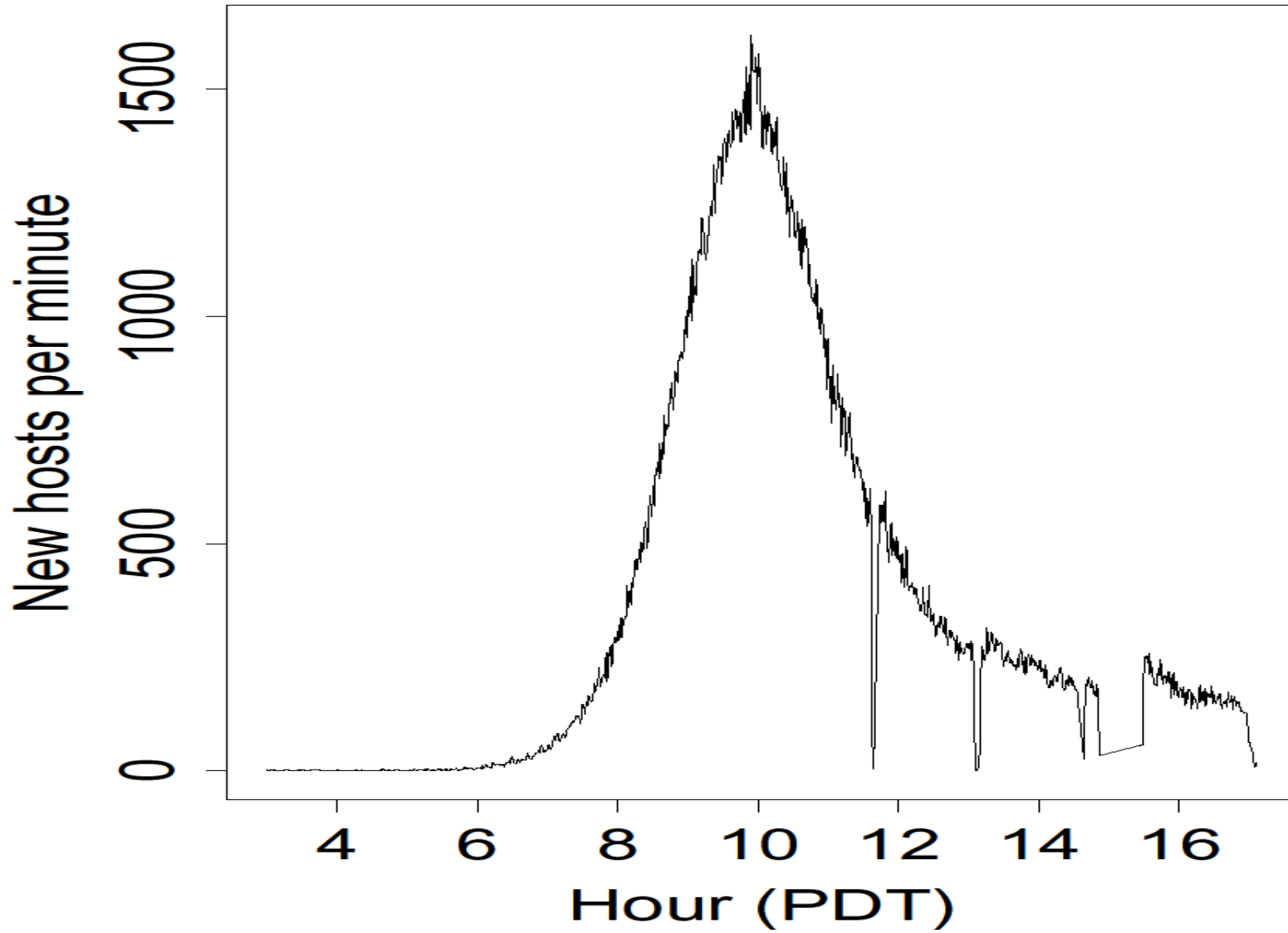
### SENATOR'S CHALLENGE

Sen. Edward Brooke is facing a primary challenge in Rhode Island. Brooke is a Republican and is currently serving his second term in the Senate. He is facing a challenge from a Democrat, who is also a member of the Rhode Island House of Representatives. Brooke is a popular figure in Rhode Island and has a strong record of service. He is expected to win the primary election. The challenge is believed to be a result of a dispute between Brooke and the challenger over the way in which the state is run. Brooke is a popular figure in Rhode Island and has a strong record of service. He is expected to win the primary election.

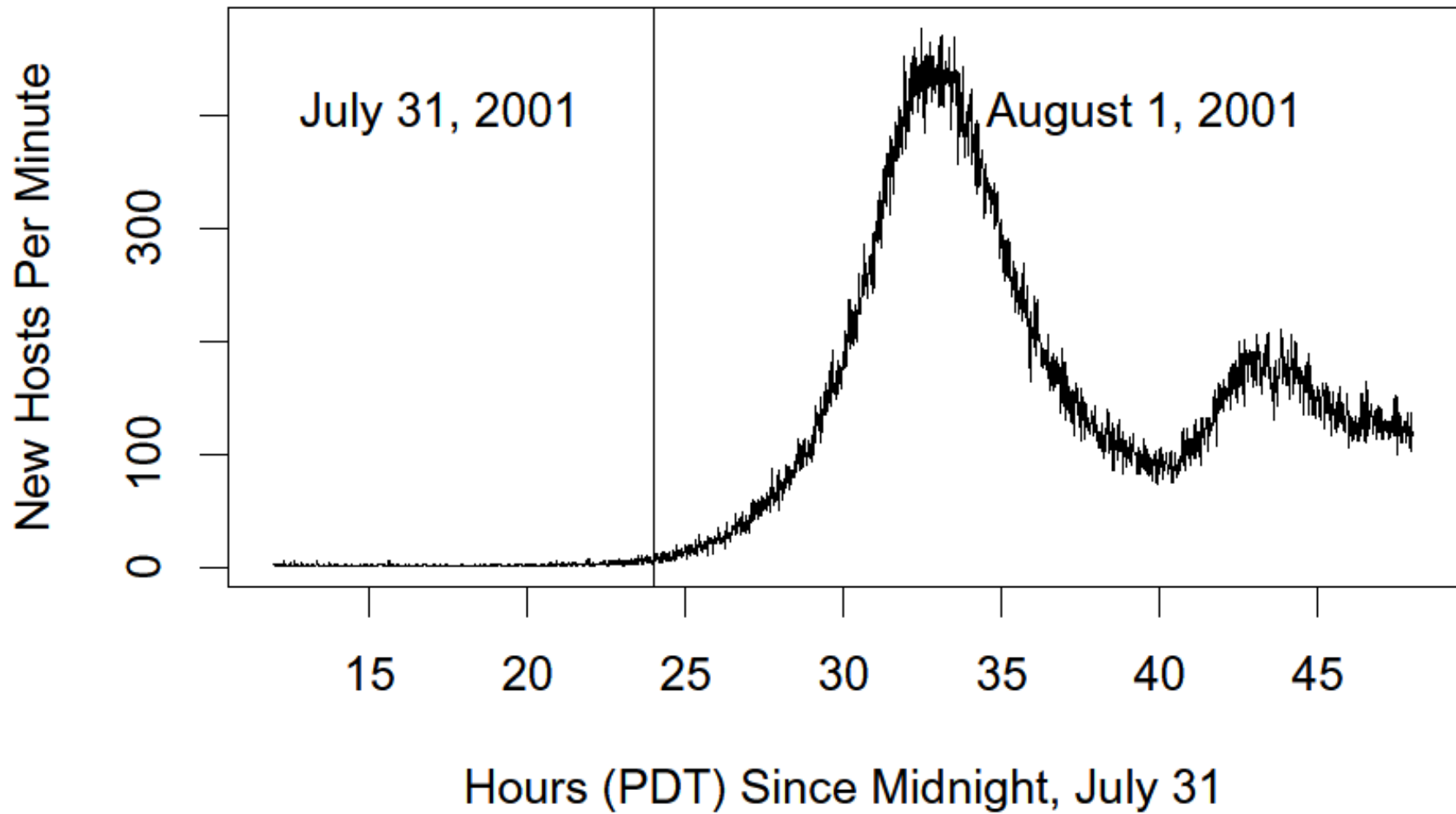
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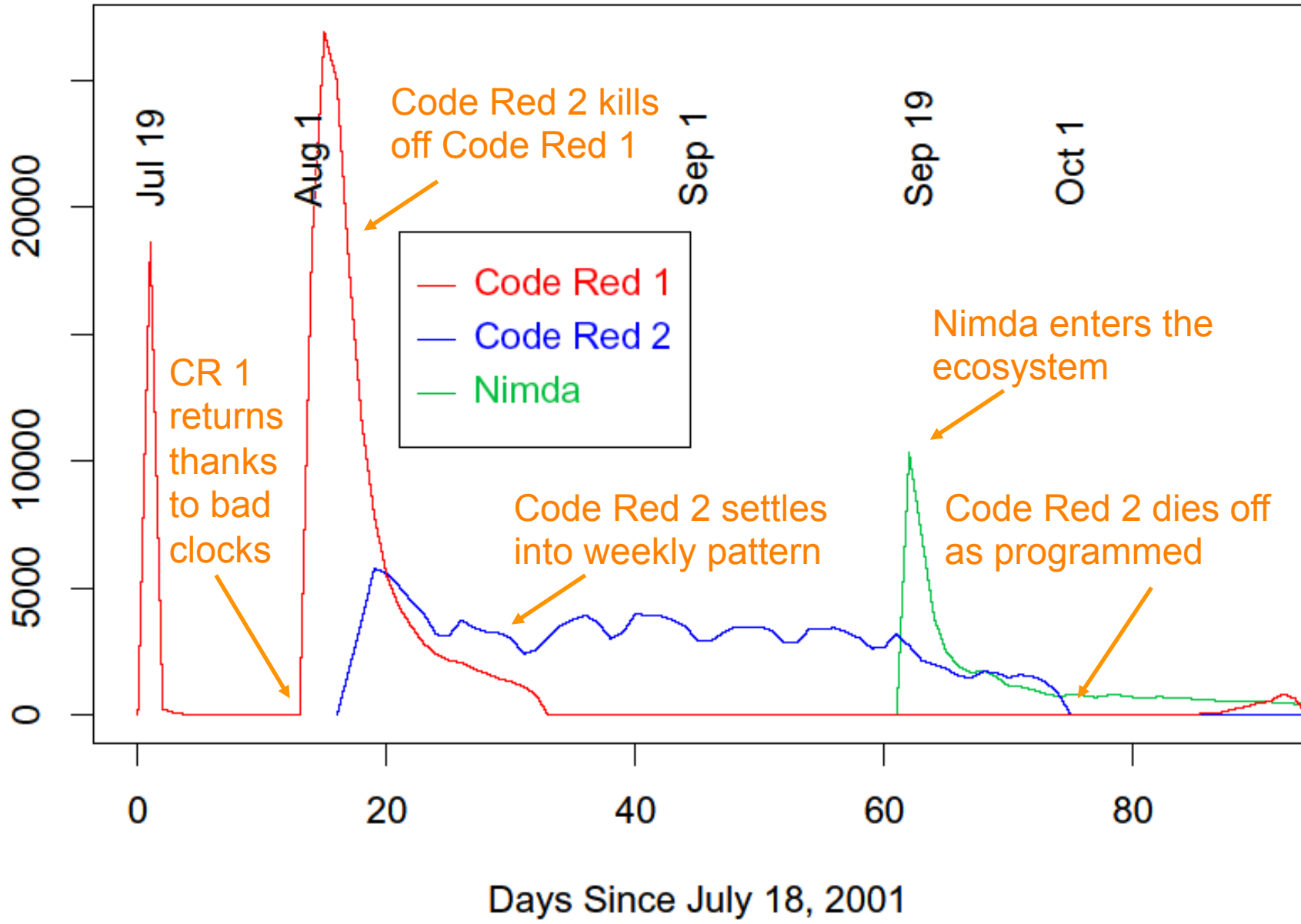
# Growth of Code Red Worm



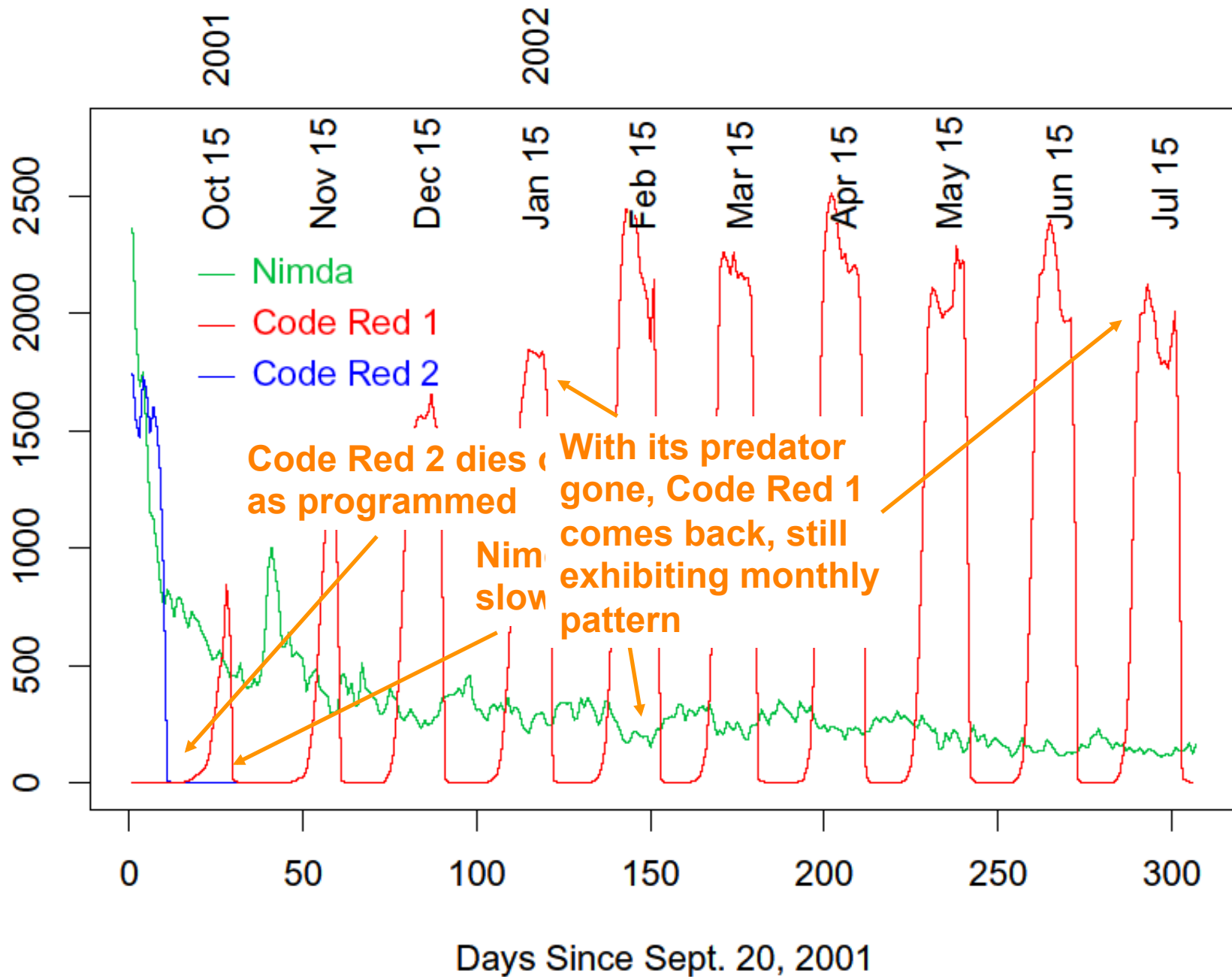
# Return of Code Red Worm



Distinct Remote Hosts Attacking LBNL



Distinct Remote Hosts Attacking LBNL



i was getting bored by the time I was introduced to the whole 'CDC' proposition.

i'm certainly no expert, and these guys clearly have a decent understanding of their subject, but i'm convinced that the whole thing amounts to a childish attempt to establish a geeky gang of hilariously earnest cyber-heroes.

I would find it very difficult to believe that the top dogs in the network security industries haven't spent a lot more time and money contemplating future exploits (obviously with the somewhat more realistic goal of stiffing businesses for as much money as they can) than this bunch.

I just can't get away from the image of a drooling, pizza-faced ghoul with a cultivated disdain for anyone who can't build a linux kernel, managing to whine nasally over IRC about how no-one really understands how incredibly inevitable a full-scale internet MELT-DOWN is, considering that he's the only man on the planet to have considered the possibility that a Worm could be programmable... uh-huh.

Nothing in the article has any real substance - the 'mathematical models' seem smugly self-serving, the anticipated propagation of a 'Wharhol Worm' being the most indulgent. Who came up with THAT one? It's all approximated, estimated and assumed.

[....]

In a word: unimpressed.

# Modeling Worm Spread

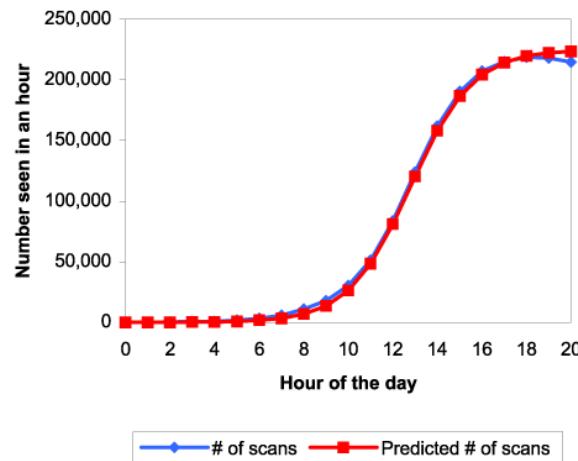
- Often well described as *infectious epidemics*
  - Simplest model: homogeneous random contacts

- Classic SI model

- N: population size
- S(t): susceptible hosts at time t
- I(t): infected hosts at time t
- $\beta$ : contact rate
- i(t): I(t)/N, s(t): S(t)/N

$$\begin{aligned} \frac{dI}{dt} &= \beta \frac{IS}{N} \\ \frac{dS}{dt} &= -\beta \frac{IS}{N} \end{aligned} \rightarrow \frac{di}{dt} = \beta i(1-i)$$

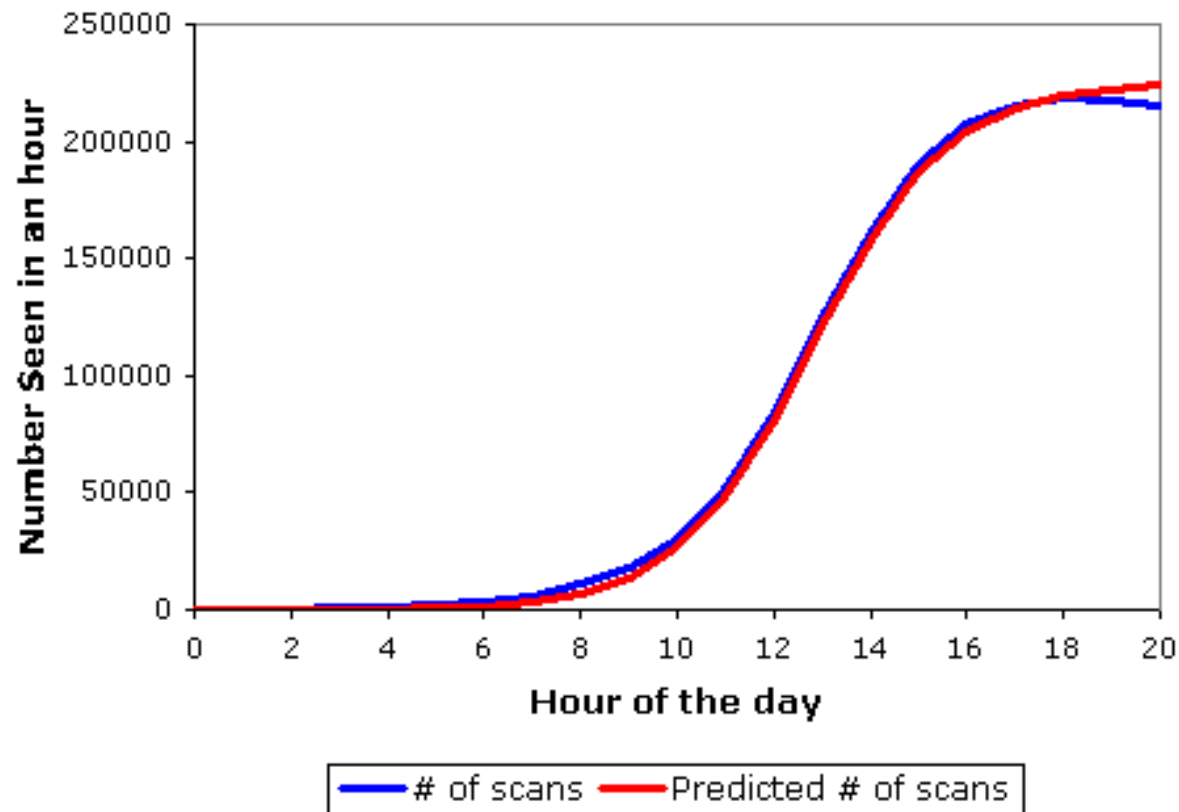
$$i(t) = \frac{e^{\beta(t-T)}}{1 + e^{\beta(t-T)}}$$





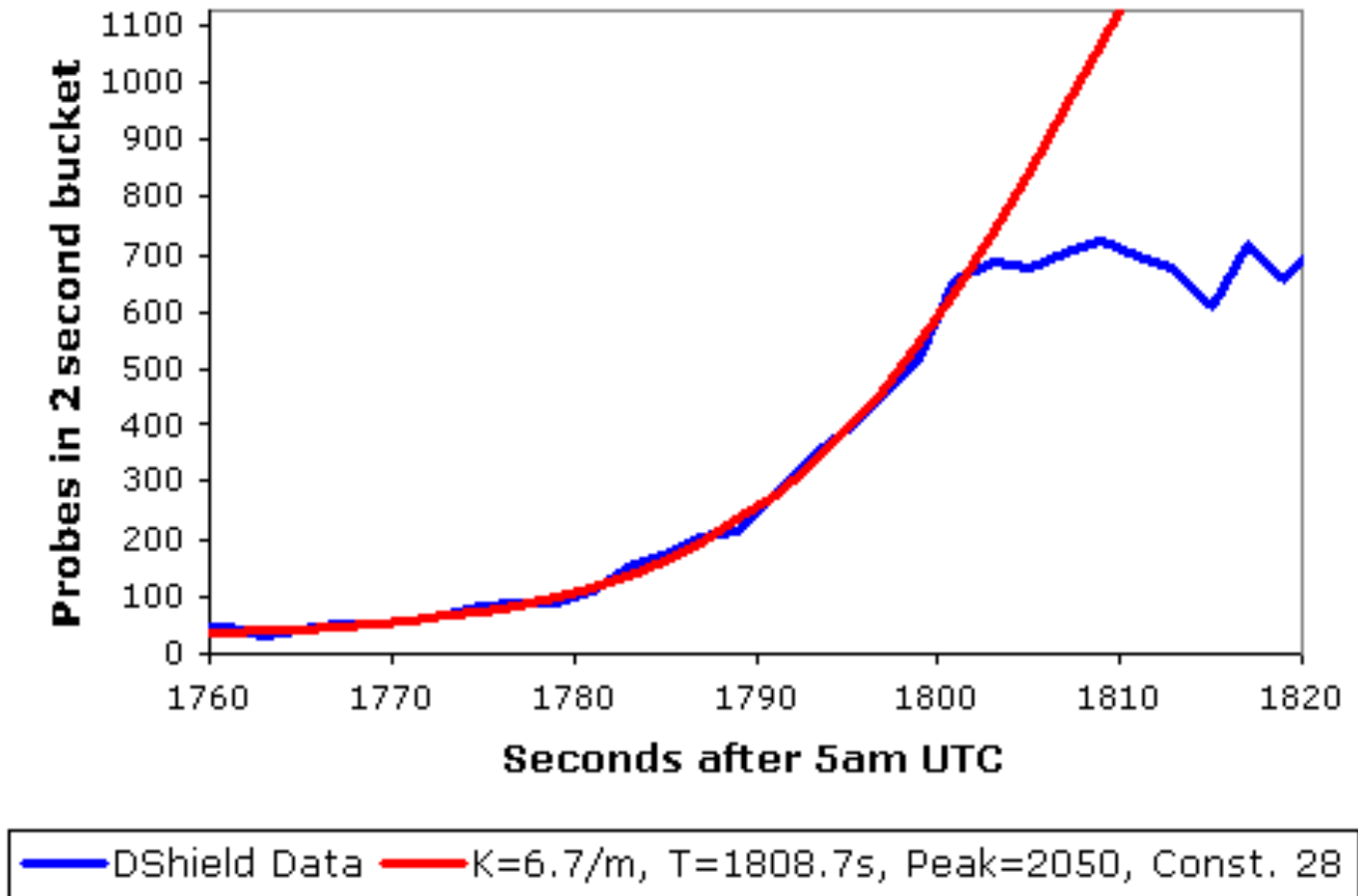
# The Usual Logistic Growth

Probes Recorded During Code Red's Reoutbreak

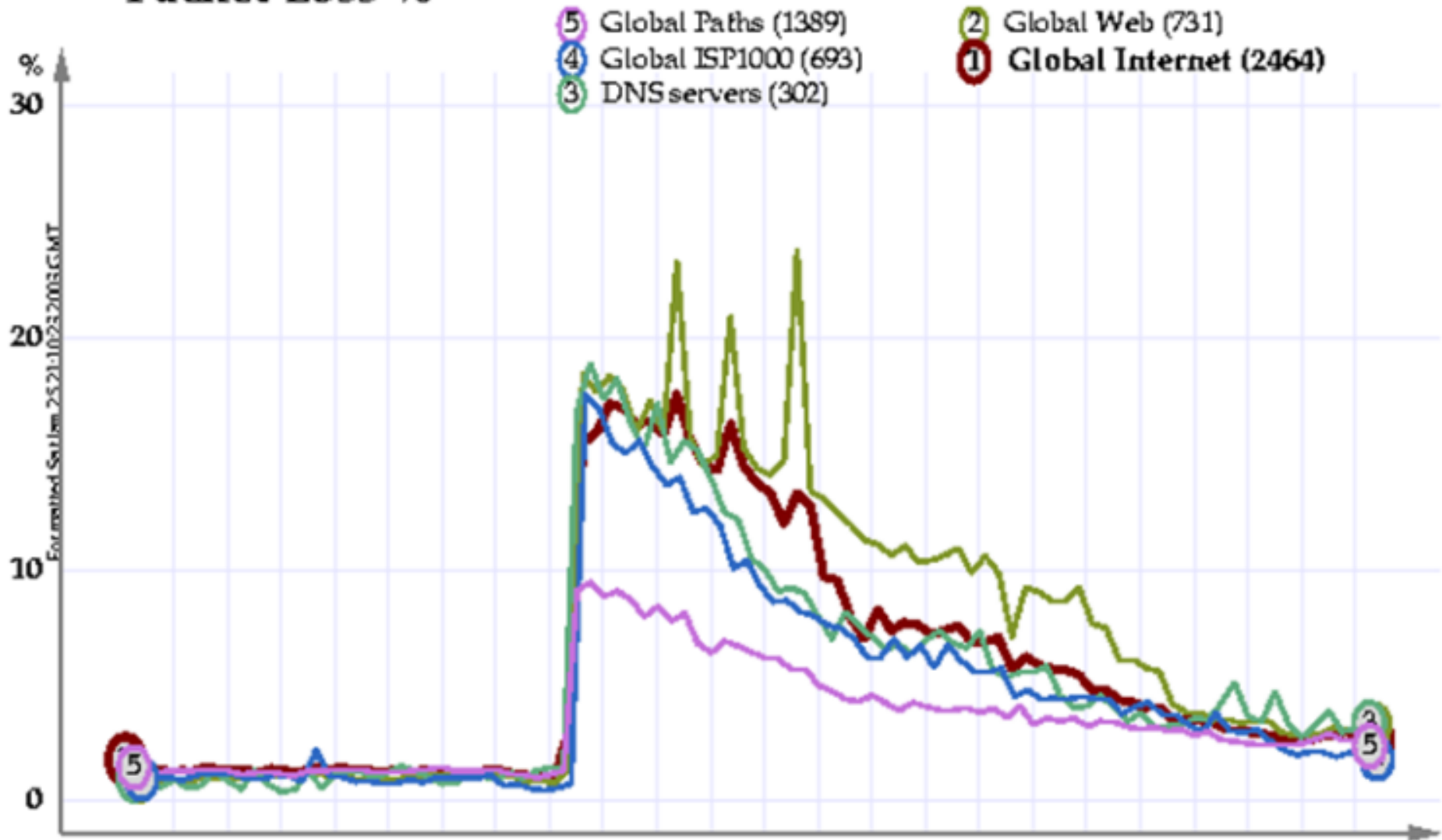


# Slammer's *Bandwidth-Limited* Growth

DShield Probe Data



# Packet Loss %



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 GMT Jan 24 Jan 02:00 04:00 06:00 08:00 10:00 12:00 14:00 16:00 18:00 20:00  
 EST Jan 24 7 PM 9 PM 11 PM Jan 25 3 AM 5 AM 7 AM 9 AM 11 AM 1 PM 3 PM