

STATUS OF THE RAND-USGS CONTROL NETWORK OF MARS. Merton Davies and Tim Colvin (RAND), Randolph Kirk, Ella Lee and Robert Sucharski (USGS)

The RAND-USGS control network of Mars is a combination of the RAND control network and the USGS network. The original data sets were:

RAND Control Network

2958 Viking and Mariner 9 images
9918 Points
33380 Measurements

USGS Control Network

4577 Viking Images
(full coverage at about 250 m/pixel)
26702 Points
55429 Measurements

1215 images are common to both networks.

Combined RAND-USGS Control Network

6320 Images
36620 Points
88809 Measurements

Standard Error of Measurement is 10.01 um

This solution solves for latitude and longitude of each point and the three C angles of each image. The overdetermination is 1.93.

The Pathfinder longitude was 33.2604 deg. (Malin's location of lander on a Viking frame and Folkner's latitude and radius.)

The Viking 1 longitude was 47.9600 deg. (Parker's location of lander on a Viking frame and Folkner's latitude and radius.)

The W equation is approximately
 $W = 176.6384 + 350.89198226 d.$

This work is in progress. All numbers are subject to change.