both UNIX and Windows operating systems.

These programs were written by Rodrick V.
China and Meng-Sing Liu of Glenn Re-
search Center. Further information is con-
tained in a TSP (see page 1).

Inquiries concerning rights for the commer-
cial use of this invention should be addressed
to NASA Glenn Research Center, Commercial
Technology Office, Attn: Steve Fedor, Mail
Stop 4–8, 21000 Brookpark Road, Cleveland,
Ohio 44135. Refer to LEW-17635/88-1.

Program Facilitates CMMI
Appraisals

A computer program has been written
to facilitate appraisals according to the
methodology of Capability Maturity
Model Integration (CMMI). [CMMI is a
government/industry standard, main-
tained by the Software Engineering Insti-
tute at Carnegie Mellon University, for
objectively assessing the engineering ca-
pability and maturity of an organization
(especially, an organization that produces software)]. The program assists in prepa-
ration for a CMMI appraisal by providing drop-down lists suggesting required arti-
facts or evidence. It identifies process areas for which similar evidence is re-
quired and includes a copy feature that
reduces or eliminates repetitive data
delivery. It generates reports to show the en-
tire framework for reference, the app-
raisal artifacts to determine readiness
for an appraisal, and lists of interviewees
and questions to ask them during the ap-
praisal. During an appraisal, the program
provides screens for entering observa-
tions and ratings, and reviewing evidence
provided thus far. Findings concerning
strengths and weaknesses can be ex-
ported for use in a report or a graphical
presentation. The program generates a
chart showing capability level ratings of
the organization. A context-sensitive Win-
dows help system enables a novice to use
the program and learn about the CMMI
appraisal process.

This program was written by Wesley Sweetser of
Goddard Space Flight Center. Further infor-
mation is contained in a TSP (see page 1).
GSC-14782-1

Grid Visualization Tool

The Grid Visualization Tool (GVT) is a
computer program for displaying the path
of a mobile robotic explorer (rover) on a terrain map. The GVT
reads a map-data file in either portable
graymap (PGM) or portable pixmap
(PPM) format, representing a gray-scale
or color map image, respectively. The
GVT also accepts input from path-plan-
ning and activity-planning software.
From these inputs, the GVT generates a
map overlaid with one or more rover
path(s), waypoints, locations of targets
to be explored, and/or target-status in-
formation (indicating success or failure
in exploring each target). The display
can also indicate different types of paths
or path segments, such as the path actu-
ally traveled versus a planned path or
the path traveled to the present position
versus planned future movement along
a path. The program provides for updat-
ing of the display in real time to facili-
tate visualization of progress. The size of
the display and the map scale can be
changed as desired by the user. The
GVT was written in the C++ language
using the Open Graphics Library
(OpenGL) software. It has been com-
piled for both Sun Solaris and Linux op-
erating systems.

This program was written by Caroline
Chouinard, Forest Fisher, Tara Estlin,
Daniel Gaines, and Steven Schaffer of Cal-
tech for NASA’s Jet Propulsion Labo-
tory. Further information is contained in a
TSP (see page 1).

This software is available for commercial
licensing. Please contact Karina Edmonds of
the California Institute of Technology at
(818) 393-2827. Refer to NPO-40303.

Program Computes Sound
Pressures at Rocket
Launches

Launch Vehicle External Sound
Pressure is a computer program that
predicts the ignition overpressure and
the acoustic pressure on the surfaces
and in the vicinity of a rocket and
launch pad during launch. The pro-
gram generates a graphical user inter-
face (GUI) that gathers input data
from the user. These data include the
critical dimensions of the rocket and of
any launch-pad structures that may act
as acoustic reflectors, the size and
shape of the exhaust duct or flame de-
flector, and geometrical and opera-
tional parameters of the rocket engine.
For the ignition-overpressure calcula-
tions, histories of the chamber pres-
sure and mass flow rate also are re-
quired. Once the GUI has gathered the
input data, it feeds them to ignition-
overpressure and launch-acoustics rou-
tines, which are based on several ap-
proximate mathematical models of dis-
distributed sources, transmission, and
reflection of acoustic waves. The out-
put of the program includes ignition
overpressures and acoustic pressures at
specified locations.

This program was written by Gary Ogg,
Roy Heyman, Michael White, and Karl
for Marshall Space Flight Center. For fur-
ther information, contact the company at
MFS-31568

Solar-System Ephemeris
Toolbox

NASA’s Jet Propulsion Laboratory (JPL)
generates planetary and lunar ephemesis
data and FORTRAN routines that allow
users to obtain state data for the Sun, the
moon, and the planets. The JPL Solar Sys-
tem Ephemeris Toolbox, developed at
Kennedy Space Center, is a set of functions
that provides the same functionality in
the MATLAB computing environment along
with some additional capabilities. The tool-
box can be used interactively via a graphical
user interface (GUI), or individual func-
tions can be called from the MATLAB com-
mand prompt or other MATLAB scripts
and functions. The toolbox also includes
utility functions to define and perform co-
ordinate transformation (e.g., mean-of-
date, true-of-date, J2000) that are common
in the use of these ephemeres. An at-
tached README file guides the user
through the process of constructing binary
ephemeris files, verifying correct installa-
tion, and using functions to extract state
data. This process also can be performed
using the GUI. Help from each toolbox
function is available through MATLAB’s
“help” function. Many of the functions in
the toolbox are MATLAB equivalents of the
JPL-written FORTRAN programs and sub-
routines used for the same purposes. A
novice can use the GUI to extract state data,
while a more experienced user can use the
functions directly, as needed, in his/her
applications. The toolbox has been tested
using MATLAB Releases 13 and 14.

This program was written by Charles F. Walker
of Kennedy Space Center. For further infor-
mation, access www.openchannelsoftware.org.
KSC-12544

Data-Acquisition Software
for PSP/TSP Wind-Tunnel
Cameras

Wing-Viewer is a computer program for
acquisition and reduction of image data ac-
quired by any of five different scientific-
grade commercial electronic cameras used
at Langley Research center to observe
wind-tunnel models coated with pressure-