

**TOPOGRAPHICAL MAPPING OF FLOOD PRONE AREAS OF SOUTHERN AND
EASTERN PARTS OF DUTSE, JIGAWA STATE, NIGERIA**

BY

**IBRAHIM GARBA KAZAURE
(PGD/SV/09/0416)**

**A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF SURVEY
AND GEOINFORMATICS, MODIBBO ADAMA UNIVERSITY OF TECHNOLOGY, YOLA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE AWARD OF
POSTGRADUATE DIPLOMA (PGD) OF THE DEPARTMENT OF SURVEYING AND
GEOINFORMATICS SCHOOL OF ENVIRONMENTAL SCIENCES**

PROJECT SUPERVISOR: DR. T.O. IDOWU

AUGUET 2012

DECLARATION

I hereby declare that this project report was written by me and it is record of my own research work. It has nor been presented before in any previous application for a higher degree. All references cited have been dully acknowledged.

Ibrahim Garba Kazaure
PGD/54/09/0416

Date

DEDICATION

This research is dedicated to my father, Alhaji Garba Alhassan Kazaure and Mrs Harira Alto

APPROVAL PAGE

This project report entitled “Topographical Mapping of Flood Prone areas of Southern and Eastern parts of Dutse, Jigawa State Nigeria” meets the regulations governing the award of Postgraduate Diploma of Modibbo Adama University of Technology Yola and as approved for its contribution to knowledge and literary presentation.

Dr. T.O. Idowu

Date

External Examiner

Date

Dr. T.O. Idowu
The Head of Department

Date

Prof. M. R. Odekunle

Date

ACKNOLEDGMENT

I am most grateful to God Almighty for seeing me through the programe gloriously. It is Him who gave me outstanding success as my birthright.

My appreciation goes to my supervisor, Dr. T.O. Idowu, who is also the Head of Department of Surveying and Geo-informatics for his efforts in guiding me throughout the project work. Your special quality is an asset to all who pass through you. Keep it up and God bless you sir. I am also grateful to all my lecturers, Dr. A.A. Musa, Dr. Orisakwe, Mr. Ali and every other lecturer in the Department of Surveying and Geo-informations, Modibbo Adama University of Technology, Yola;

With deep attention. I gave this appreciation to my wife and children, Sadiya and Aisha, Husuna, Abdullahi and Maryam. Thanks for all your patience every time I am away from home.

Lastly, I show sincere appreciation to people like Alhaji Musa Yusuf Hadejia, Mohammed Idris Hadejia, Alhaji Abdullahi Hassan, Musbahu Ahmed and Kabiru Aminu and all the authors whose works are relevant to this project.

ABSTRACT

Due to the rugged topography of Dutse, the capital of Jigawa state, more than 200 houses are accommodated on the hill and any expansion is practically impossible, nevertheless, the town is undergoing series of structural and road network developments, which makes the area vulnerable to gully erosion. The erosion is widely occurring and spreading on all the exposed surface within the town thereby affecting agricultural and other land use. The scenery displayed by these fast growing gullies in the disturbed areas are always increasing every rainy season. The aim of this project is to produce topographical map of the flood prone areas of southern and eastern parts of Dutse. Areas affected by gully erosion were identified and topographical survey of the areas carried out. The XYZ coordinates of points were taken at 10m intervals to cover the identified affected areas using differential GPS, These data was used to produce the topographical map of the affected areas using Civil Card Software. Thus, map produced shows the gullies as well as the topography around them. Due to the steep nature of the topography and landform, the Jigawa state government should as a matter of urgency construct along the capacity channel drainages of 2m width within the study area so as to discharge water easily to the main river in the right direction.

TABLE OF CONTENTS

Cover page.....	i
Title page.....	ii
Declaration.....	iii
Dedication.....	iv
Approval page.....	v
Acknowledgement.....	vi
Abstract.....	vii
Table of content.....	viii
List of figures.....	x
List of table.....	xi

CHAPTER ONE: INTRODUCTION

1.1	Background of study.....	1
1.2	Problem statements.....	1
1.3	Motivation for the project.....	2
1.4	Aims and objectives.....	2
1.5	Study area.....	2
1.6	Limitation of the study.....	3

CHAPTER TWO: LITERATURE REVIEW

2.1	Basic concept of topographic mapping.....	7
2.2	Review of related literature.....	7
2.3	Justification for the project.....	9
2.4	Application of topographic map.....	9

CHAPTER THREE: METHODOLOGY

3.1	General framework of the methodology.....	11
3.2	Data acquisition.....	11
3.2.1	Instrumentation.....	11
3.2.2	Ground survey techniques.....	11
3.2.3	Reconnaissance.....	12
3.2.4	In situ check.....	13
3.3	Data quality.....	16
3.4	Data processing.....	16

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF RESULT

4.1	Presentation of results.....	22
4.2	Analysis of result.....	22

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1	Summary.....	25
5.2	Conclusions.....	25
5.3	Recommendations.....	25
	References.....	27
	Appendix A.....	28
	Appendix B.....	30

LIST OF FIGURES

Figure one:	2.1 Map of Nigeria showing the location of Dutse, Jigawa State	9
Figure two:	2.2 Map of Jigawa State showing the location of the study area (Dutse).....	10
Figure three:	2.3 Map of the Study Areas (Dutse).....	11
Figure four	3.1 Relief map of southern part of Dutse, Jigawa State.....	23
Figure five:	3.2 Relief map of eastern part of Dutse, Jigawa State.....	24

LIST OF TABLES

Appendix A: The result of statistical test.....	30
Appendix: B List of adjusted coordinates of the points obtained by differential GPS using Ground Survey Techniques.....	32

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Maps, whether analogue or digital are indispensable for all land-based developments and activities such as road construction, communication network, mineral prospecting, location of industries and utilities. Properly delineation, boundary demarcation, erosion control, setting of land dispute, urban and regional planning, census mapping and enumeration and wild life conservation.

Over the year, Dutse which is sit of the traditional head of the district is on top of a hill, a rock out crop, an older granite. The outcrop rises from 15-20 degree near the crest; it has a rugged topography that many not support high population. Owing to these conditions, no more than 200 houses in accommodated on the hill and any expansion is practically impossible. Now with the status of state capital and a sit of government, most of the settlements around the rock are being expanded and some more are developing. Road networks have been constructed throughout the new layout.

Furthermore, a new road had been constructed to link up the newer extention to the old settlement on top of the hill. Soil profile on the hilltops are either very shallow, measured as between 5-10cm or absent and at the foot of the hills, the profile are deeper sometimes up to 12meter.

These conditions put together, make the area vulnerable to gully erosion. Whenever, it rains, slope wash comes down with very high velocity from the surrounding hill slope to wash down the soul at the foot of the hills, there by forming extensive gullies. In these ways, two settlements, Limawa and Galamawa, situated at the foot of one of the hills-Dutse Kwallo and drained by Jambo stream, which is a sub-tributary to the Warwade River, have for long been seriously threatened by gully.

1.2 PROBLEM STATEMENT

Gully erosion is widely spread throughout the savanna zone/region. Hence, this study is to provide a sort of framework for identifying the effects of gully erosion on the surface. This is because Dutse capital being in savanna zone has also been affected by this type of erosion, which is rapidly increasing and as such it is adversely affecting agricultural land use. The erosion is widely occurring and spreading on all the exposed surface within the town. At several places rain-wash has removed fine materials leaving the surface uncovered by the thin layer of soil.

Thus, in Dutse, the spectacular and insuring scenery displayed by the gullies in the disturbed areas are always increasing every rainy season, more especially in the Kalgo and Marabusawa Gully in Dutse town is seen as a natural phenomenon especially in the sloppy areas, therefore some people think nothing be done to check it occurrence and growth because it has to exist.

The fundamental problem being faced in this study is to isolate the pronounced factors, physical or anthropogenic (human) that enhance the formation of gullies is the area; so that preventive measures could be taken. It may also be contended that human factors more than physical factors responsible for high rates of gully erosion in the town and its environs. The phenomenons of gully erosion are not new in the country. Gully erosion occurs in many places in the country under different geological, climatical and physical conditions.

1.3 MOTIVATION FOR THE PROJECT

The devastation impact of erosion and land degradation has been of great concern in Dutse monopolitant. The study will be significant in providing useful ways and method to be employed in order to counter untreat to human habitant, loss of enable farmlands, and damage to existing intrusturctors, so as to preserve the basic necessities of life.

1.4 AIMS AND OBJECTIVES OF PROJECT

The aim of this project is to acquire survey data to produce topographical map of flood-prone areas of southern and eastern parts of Dutse, Jigawa State.

The aim would be achieved through the following objectives:

- i. To identify areas that are affected by gully erosion
- ii. To carry out survey of the affected areas
- iii. To produce a map showing the areas affected by gully erosion.

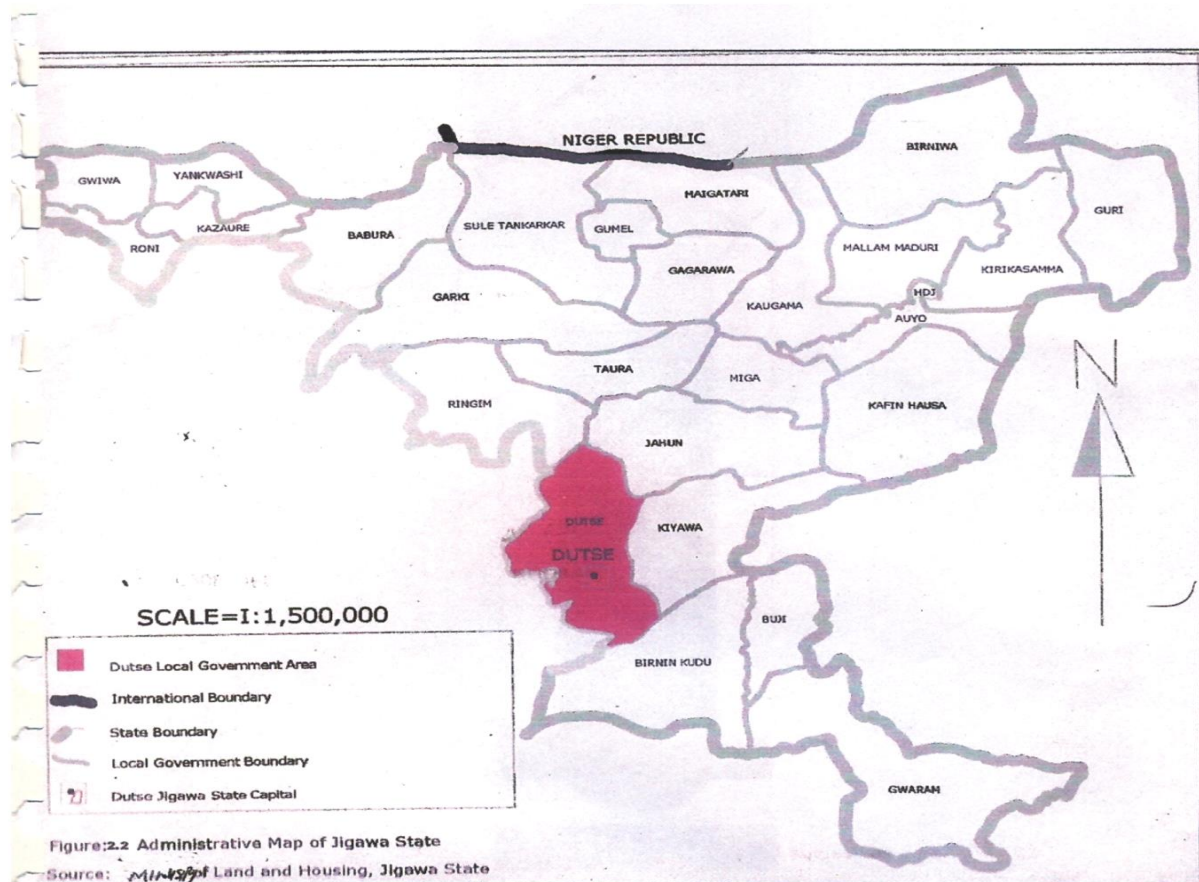
1.5 STUDY AREA

Kargo village area and Zai area is located in the South-East part of Dutse, Jigawa state and is lies approximately between latitude $11^{\circ}45^1$ to $11^{\circ}50^1$ and longitude 20^1 to $09^{\circ}25^1$ (sea map below) and approximately located 1.5km Southern and Eastern part of Dutse metropolis along Kiyawa road. The study area is made up of diverse ethnic tribes which consist of Fulani, Mangawa and Hausa fig. 1, fig. 2 and fig. 3 shows the map of Nigeria and the location of Jigawa state in the map of Nigeria and the location of the study area in fig. 3 in the map of Dutse Local Government respectively.

1.6 LIMITATION OF THE STUDY

This study is challenged with the responsibility of producing the topographical mapping of flood-prone areas of southern and eastern part of Dutse, Jigawa State. It shows how data were obtained from field using different GPS instrument for position fixing. The data were inputted managed manipulated and analysed using GIS software packages like Auto card 2004 and civil software.

This work is limited by the area coverage of Dutse metropolitan of two site; southern and eastern part affected by floo-prone. Lack of existing map was also limiting factor in the area coverage of the study.



CHAPTER TWO: LITERATURE REVIEW

GENERAL STATEMENT

This chapter deals with literature review whereby the basic concepts of view are discussed. Also, in this chapter, other topics are discussed which include geographical information system, topographical mapping, Data base building, erosion, road and management, data display and output devices, data source for topographical mapping, ground control position fixing and finally the different GPS instrument.

2.1 BASIC CONCEPT OF TOPOGRAPHIC MAPPING

Surveying and mapping concerns man's most valuable resources. These points to land as the focal centre. Land resources are natural and are neither inexhaustible nor indestructible as many men and countries have already found to be their display. Mapping reveals information for the management of such precious resources, thus, disallowing it to waste away. Maps are needed always. That is the basic fact for faster development in order to provide our citizens at least the minimum basic needs. Maps are used for nearly every aspect of government and private sector activities. As stated in Ndukwe (2001) from the work of Serpell (1979), part of its uses include; cadastral and land registration services, economic and physical planning and building regulations; environmental management and pollution control.

2.2 REVIEW OF RELATED LITERATURE

Mapping is defined as a representation, on a plane surface, of the physical feature (Natural and artificial of part or whole of the earth's surface at a give scale, by the use of signs and symbols with the method of orientation indicated.

The first actual experiment in using photogrammetry for topographic mapping occurred in 1886 by captain Daville, the surveyor General of Canada. He found laussedat's principles extremely convenient for mapping the rugged mountain of western Canada (Wolf,1986).

According to a Greak scientist, who based the compilation of a comprehensive map of the world on the determination of circumference of earth.

Erathosthene as far back as 3rd century B.C. and another Greek scientist Hipporchus in the 17 A.D. i.e. (1666) used astronomical system of latitude and longitude for terrestrial mapping.

Mc Graw Hill (1971), observed that topographical maps are the most basic maps recording the original surveys of the country (earth's surface). All such maps have contour line relief

representation with standard symbol and numbering system. Relief features such hills, mountains and plateaus are commonly shown on maps by contour lines, the lines drawn to show the shape of the land by its elevation above the level.

According to geologist, topographical map gives information about the form of the earth's surface, which is shaded or coloured show where different rock units occur or just below the ground surface which is different from other (Richard, 1988), while Stephen (1992) see map is a survey in the form of drawing. Others like, Bajibir (1990). He describe map as a conventional representation of the earth's surface or part of it on paper or sheet showing roads, rivers, mountains, valleys, causes, etc and features are represented in both natural and man-made (artificial).

Several method are used to accurately the configuration of the land surface since on topographical plan, the method of showing relief are however, inadequate cause they do not tell the reader the elevation about the sea level of all points on the map of how the slope are but topographical contours gives this information and make useful types of topographical map (Stretcher 1992).

Ramsay (1980), Bannister and Raymond (1985) gives their recommendations from the general shape of the interpreted based on contour line.

The map or plan was is now and always will be a two dimensional representation of a three dimensional reality and map is not moved (Stephen, 1992).

However, Britannica (1981) in short provide a complete of the terrain and important information for all activities involving the use and development of the land.

Ramsey (1980) stated that in 1973) the first digital sheet at 1:250 was published after coding and storing data on magnetic tapes and providing print out maps by means of a precision plotters. The map user can now buy magnetic tapes for products or maps from computer once the data been stored. They can be recalled, programmed to predetermined detail selection, such as roads, buildings only.

Marsh (1991) observed that modern land development often alters drainage networks by obliterating natured channels, adding artificial channels, or changing the size of drainage basins. The process of mapping of individual drainage basin with a large drainage net requires the drainage divided between channels of a particular order. This is best accomplished with the used of a topo contour map. However, held inspection may be needed in developed areas in order to find culverts, diversion and other drainage alternation. As first step channels, should be traced and ranked, taking are to note the scale and level of hydro details by the base map.

Furthermore, flood plains can be delineated in 4 ways, according to (1) topography (2) vegetable (3) soil (4) the extent of past flows: Topo contour maps can be used to delineate flood plain if the valley walls are high enough to be marked by two or more contour interval. However, those that carry only a single contour, or fall within the contour interval cannot be delineated, even though they may be topographically distinct to the field observer.

2.3 JUSTIFICATION FOR THE PROJECT

The project will provide on up to data digital and analogue topographic maps that will serve as a base map or as a functional tool for development planning of the long standing drainage pattern/problem and other land-based development in Dutse. It will help in providing the ministry of Land and Housing Dutse Jigawa State with the growing trend for future planning of Dutse.

The project will also provide a topographical map which can be used by surveying department as a reference material.

2.4 APPLICATION OF TOPOGRAPHIC MAP

Topographic map is the most widely used form of graphical representation of the earth's surface. It contains information useful to the specialist in various fields. It depicts accurately the physical characteristics of the surface of the earth. It is therefore a very essential tool for national planning. From the available topographical maps, we can see easily how correctly the physical surface of the earth has been documented. Information concerning the topographical mapping of the earth surface are collected and published regularly by the United Nation Organisation (UNO), world cartography.

Topographical map usually portray both natural and man-made features. They show and name the works of nature including mountains, valley, plains, lakes and vegetations. As such they are very essential tool for various professional since they interpret the nature of the land (Terrian) for the projects such as buildings, rail ways, roads, drainage, channels and pipeline (which is this case study). All of the above projects depend on topographical maps before the project proceeds.

Lines to portray the shape and elevation of land; a topographical map renders the three dimensional ups and downs of the terrain on two surfaces.

It states that of course to determine the difference in elevation between two point, contour intervals or the distance in altitude between adjacent contour lines must be known and this is given at the bottom of the map. Some times, dashed counters are present; this structures for storing geographical knowledge and experiences, without which we would find familiar world of personnel

experience and would be hesitant since many of us lack over, maps gives us means not only for storing information, but both for analyzing, comparing and generalizing or abstracting it from thousands of separate experiences of places, we create spatial clusters that becomes nations, district, region, countries, all in relation to another.

However, Britannica (1981) stated that topographical maps provides a complete inventory of terrain and important for all activities involving the use and development of level. Several methods used to how accurately the configuration of the earth surface on topographical maps. The method of showing relief are however inadequate because they do not tell the reader the elevation above mean sea level of all point on the map, of how steep the slope are but the topographical contours gives the information and makes the most useful type of topographical map, Strangler (1992).

Civil (1989) stressed that without topographical information it may be impossible to access much of the topographical information observed.

CHAPTER THREE: METHODOLOGY

3.1 GENERAL FRAMEWORK OF THE METHODOLOGY

This chapter dedicated to the method of data acquisition for the project at hand. However, it also deals with the description of the study area showing its location and extent on the globe. Other issues discussed here include; data quality, method of acquisition of data processing and output.

3.2 DATA ACQUISITION

Data acquisition is fundamental to topographical mapping, data for this project was derived from both primary source of data and secondary source of data. The primary sources of data include the fieldwork, where ground survey techniques are use of differential GPS to obtain the X,Y,Z coordinates of all points required for plotting the topographical map of the study area.

3.2.1 INSTRUMENTATION

The instruments used in the field survey foe data collection and processing include the following:-

- a. Total station
- b. Differential GPS (Promark 3)
- c. Hp Compaq Computer and its accessories
- d. GIS Software packages, such as
 - i. Auto cad 2004
 - ii. Civil cad 2006

3.2.2 GROUND SURVEY TECHNIQUES

The ground techniques is a method adopted in this project where by the observation was carried out on the ground. The procedures followed in executing the ground survey aspect of these projects are:-

- Reconnaissance
- In-situ check
- Data acquisition/collation
- Data input, management and storage.

3.2.3 RECONNAISSANCE

The reconnaissance is the preliminary aspect of any survey which a surveyor does in order to achieve a set up objective. The preliminary work is divided into two forms.

- i. Preliminary office work
- ii. Field reconnaissance

In preliminary office work, I went to Survey Department of the Ministry of Land and Housing Dutse, Jigawa State where I collect the list and coordinates of a control point of an existing area as well as the existing map of an area.

The coordinate collected are seen in the table below:

Point	Northing (m)	Easting (m)	Height (m)
J274	1296 278.714	540 864.444	470.679
J275	1296 295.601	540 851.437	472.743
J277	1296 287.147	540 878.873	467.944

In field reconnaissance, I went to the site physically to see the existence of the information I have collected in the course of this office reconnaissance.

During the field reconnaissance, the following duties/functions were performed:

- a. Locating the position of a control that are to be used for the connection.
- b. Selection and marking of station i.e. the station that forms the boundary and the station that were used for fixing details.

During the selection and marking of stations the following factors were considered:

- i. Ensure visibility between the station
- ii. Securities to the station i.e the station were sited away from traffic and busy areas etc.
- iii. The station were selected and marked up in such a way that there are permanent i.e witnesses work that can guide to easily located the point.
- iv. That all subsidiary station sited where many details could be fixed.

3.2.4 IN SITU CHECK

In order of the work/control to be established in a desire system, there is need to connect (i.e) the work to the existing control. For this reasons, I verified on whether the control to be use for the connection has been tempered with or not.

TESTING THE EXISTING CONTROL FOR IN-SITU

The survey regulation requires that new survey should be connected to the existing control (if any) and such controls must satisfy the condition for in-situ.

The in-situ checks is the process of verifying the position of the control that is to be use for the connection in surveying. In the course of this project. I carried out an in-situ check and it was found the the controls are in their correct position this is because the difference between the measured and computed angles and distance between the controls were very minimum i.e. within the allowable error as seen below. The operations in-situ were done in two stages i.e. in the field and in the office.

IN THE FIELD

Three controls J274, J275, J277 whose coordinates were collected during the office reconnaissance were used for the connection. But before then, their positions were verified as follows:

Instrument total station (TCR 403) was set up and leveled on control J274 where necessary orientation was made. During the orientation, control J275 was used as a reference respectively. The instrument was rotated to bisect the target held at J277 where the bearing and distance of $239^{\circ} 23' 40''$ and 21.33m and distance of $239^{\circ} 41' 58''$ and 17.51m were observed.

Thus:

The included angles at J274 = forward bearing – basic ward bearing

$$= 239^{\circ} 41' 58'' - 322^{\circ} 23' 40''$$

$$= 82^{\circ} 41' 42''$$

IN THE OFFICE

In the office, the distance of the two traverse log and the included angle subtended at point J274 were computed as seen fig below:

From STN A	Bearing	Hor. Dist (M)	±DN	±DE	N (M)	E (M)	To STN B
					1296 278.714	540 864.444	J274
J274	322° 23' 43 ¹¹	21.316	-16.887	- 13.007	1296 295.601	540 851.437	J275
J274	239° 41' 48	17.511	+ 8.4333	+ 14.429	1296 287.147	540 878.873	J277

Thus

The included angle subtended at J274 – forward – back word hearing

- 239° 41' 48 - 322° 23' 43¹¹
- 82° 41' 55¹¹

TEST

The controls were tasted by comparing the difference between the measured and the computed quantities as follows:

- i. The difference between the included angle computed and the measured as:
 $82^{\circ} 41' 55^{11} - 82^{\circ} 41' 42$
 $00^{\circ} 00' 13^{11}$
- ii. The difference between the distance i.e. J274 + J275 computed and measured as:
 $21.316 - 21.32$
 $= 0.004\text{m}$
- iii. The difference between the distance d2 1.C J274 – J277 computed and measured as:
 $17.511 - 17.52$
 $= 0.009\text{m}$

CONDITION FOR IN-SITU

The condition for in-situ in third (3rd) order traverse is that, the angular difference between the measured and the computed should not exceed $\pm 30^{11}$ and the linear difference between the measured and the computed should not exceed $\pm 0.30\text{m}$.

THE METHOD OF OBSERVATION

The method I used is stop - and - go in order to achieve desired accuracy, the DGPS is capable of providing data. Acquisition procedure involves step by step algorithm used in data collection from the site field observation. The control point and points of interest (spot height) were coordinated by the use of PROMARK 3 (Dual frequency GPS). In operation the Dual frequency GPS comprises of MASTER (stationary at the controlled point) and ROBA (moveable) as the same implies with each having a separate antenna for receiving signal from the satellite.

The MASTA was set up over the required station (control point) and its height over the station was measured and the pillar number is recorded, the instrument was initiated and the operational procedure is as follows:

First, the instrument was on:

1. The survey ICON on the window screen was selected and enter was pressed.
2. Menu key was pressed as set up, was selected from the pop-up menu. Enter was also pressed.
3. From the menu, coordinate system was selected. Leading to another menu where either primary or secondary coordinates system is to be chosen.
4. UTM was selected from the list of different projection systems as enter was pressed.
5. On the set up menu, map datum was also selected and enter pressed.
6. Primary/Secondary coordinate system was chosen.
7. On the map datum menu, MINNA datum was selected and enters was pressed.
8. Escape key was pressed once and log key was also pressed.
9. On the survey settings. Site ID was selected, survey mode was chosen, (static, stop – and- go and Kinematics). On the master GPS we select static, while on the Roba stop – and- go was chosen. Site description was entered, Antenna Height, Units (meters), Height types either stand/vertical was chosen, Raw data interval of either 1,2,5,10 and 15sec was selected, time on site of 60sec was also entered.

Depending on either the MASTA/ROBA, on the MASTA GPS control point was selected and OK was pressed to allow the GPS start simulation. But on the ROBA we need not to select control point

since the aim of the ROBA is to coordinate points of inurn other than control point.

10. On every point of interest , OK was pressed to coordinate the point as point 1 which is automatically saved on the instrument memory. When the coordination complete, the instrument make a beep sound. This procedure was repeated throughout the area under question, to coordinate points as much as need. When the operation was completed. Done was pressed to stop simulation and resection.

3.3. DATA QUALITY

This is determined by the validity and reliability of such data on the assumption that the observers of such data are trustworthy and experienced (Iduwu,2007). The validity of the data is measured by the precision of the instrument used, while the reliability of data is determined by accuracy of such data. Differential GPS (promark 3) which can obtain the coordinate to the nearest 0.001” is the instrument used for the purpose of the project.

The instrument at the end adjusted all data entry for any errors as can be seen in Appendix B.

3.2 DATA PROCESSING

Data input is the actual entering of raw data obtained from the fiord into Geographic Information System (GIS) environment where it was processed. This can be done manually by downloading in this project work, the raw data were downloaded from the promark 3 via on interface into a Laptop Computer for processing.

This instrument made up of Software caked GNSS solution to download data into the computer system.

The procedures downloaded the data into the computer system as follows:

Double click on GNSS solution; it opens by asking the operator.

What do you like to do?

Create a new project
Open an existing project
Open the last project you work on
Run without a project
Don't show this dialog again

So, I click on create a new project.

I will open another page.

New		X
Project		
# Land survey project	Project name:	
	Project no:	
	Use default setting	
	Modify default setting	
OK		Cancel
		Apply

I click on OK for further processing.

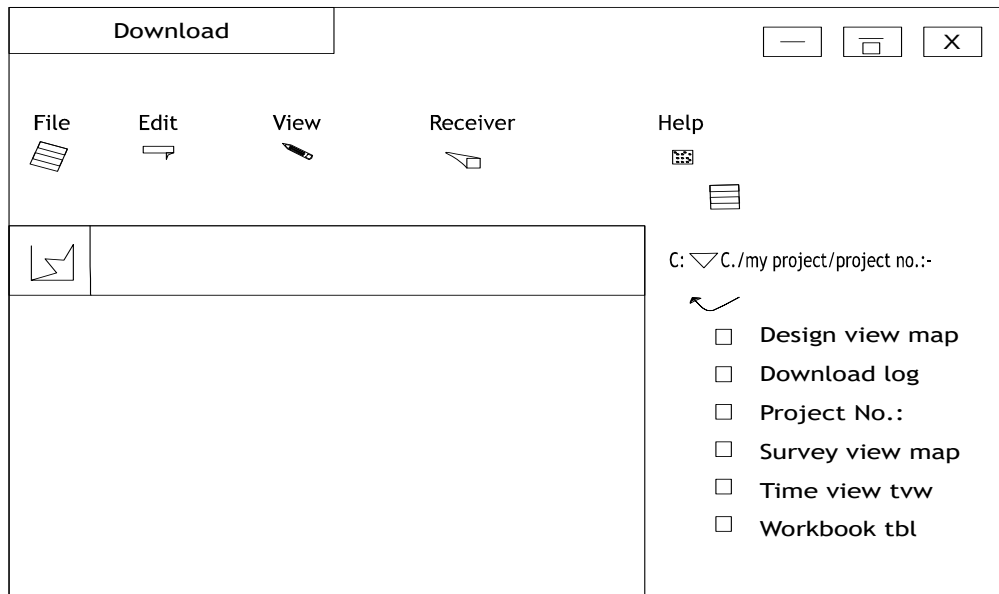
The software opens another page which shows.

Import	X
What would you like to do next?	
Download raw data from receiver or cord	
Import raw data from files	
Download raw data from internet	
Import geo. data from file	
Do not import anything now	

I click on download raw data from receiver or card.

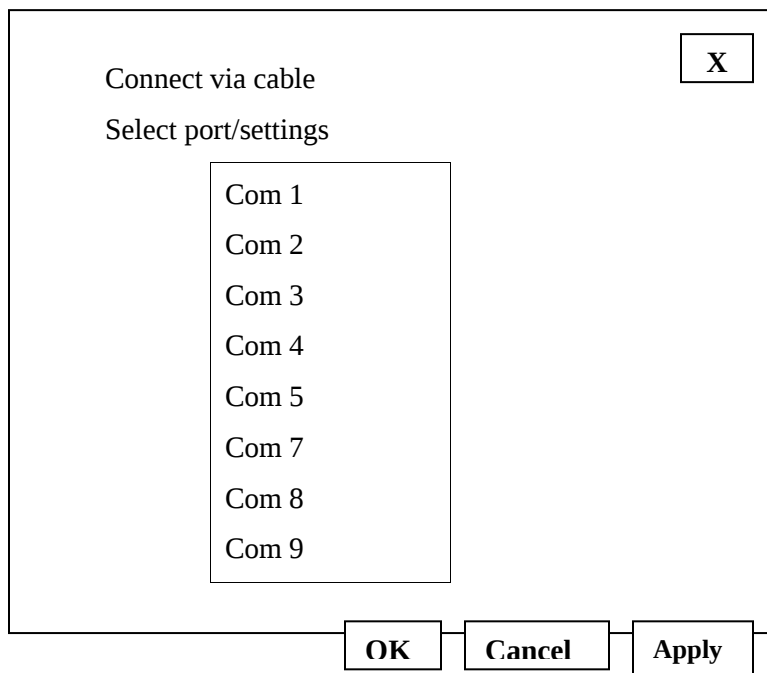
At this time, I connected the cable wire to the instrument.

Another page opens by showing:



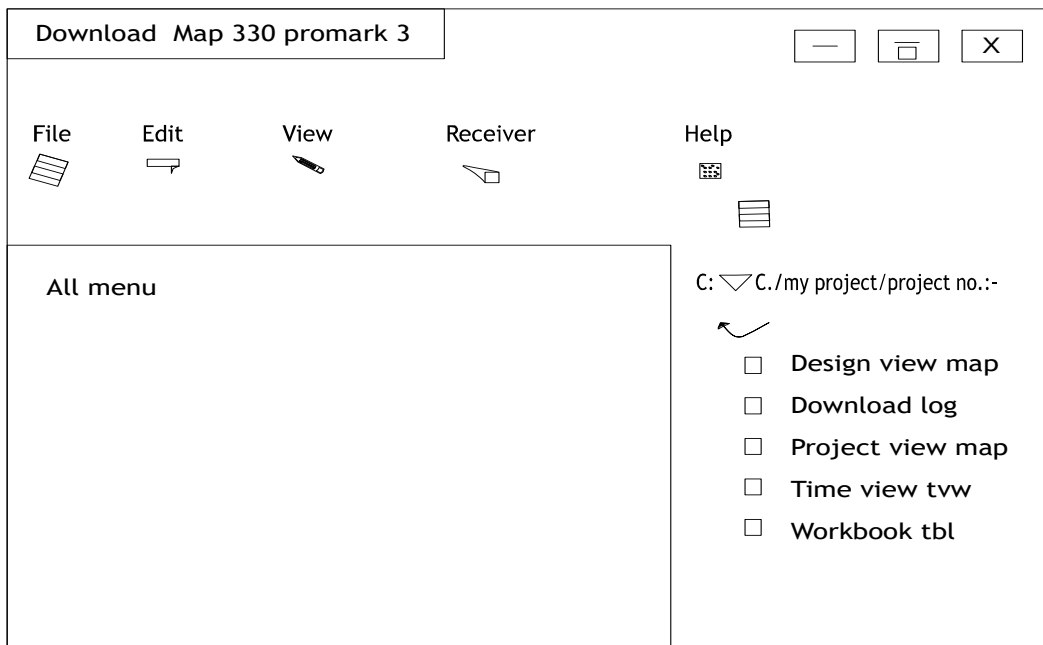
At this stage click on the above which look like bed I make an arrow.

It shows:



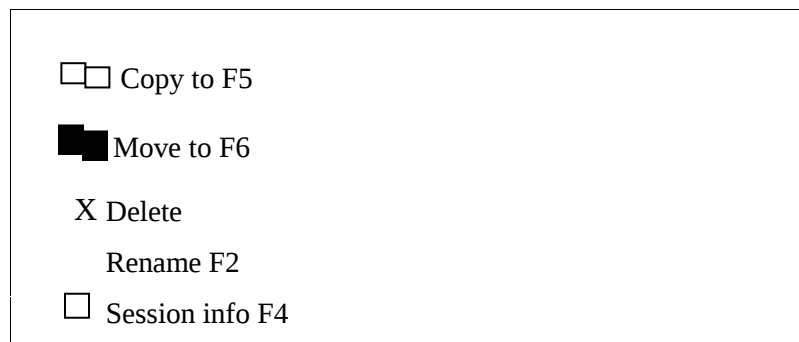
At this stage, I click on Com 6 and put OK.

Another page comes by showing



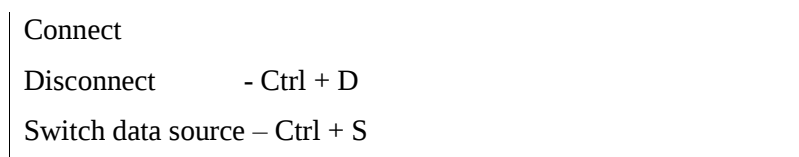
At this stage, above the page is counting the date from January to fade in the year so it you remember the date of your observation you closed the cursor.

At the stage click on right click on the date its show:



At this stage clicks on copy.

It shows copying from rover or mater to computer after copying come back to file it show:



CLICK ON DISCONNECT

I reposed the same procedure with rover and end to show the shadow of the field observation how it take place. From this I come to data

Importing GPS data					-	=	X
Raw data							
Import	Site	Date	Time	Dynamic	Antenna height	Height type	Antenna type
Broba	Broba	Date/month/yr	Time	☒		Vertical	11 04 54
Bmasta	Control point	Date/month/yr	Time	☐		Slant	11 04 54

From there I edited the correct coordinator of Northing and Easting.

Then I come to OK.

By open the arrow

It show the following

TO IMPORT

To import and process single sites

To import and process baselines

To import/process and adjust

So click on to import/process and adjust, so it show baseline processing

☐	☐	☐	☐	☐	☐	☐	☐
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

It shows GNSS solution (survey view map project No:-

With the total no. of rays at the projects site.

Then, I come to project.

When it shows so many items include land survey reports.

It shows:

Select the needed paragraphs

☐ Coordinate system summary

☐ Point count

☐ Control point

☐ Reference points

☐ Target point

☐ Logged point

☐ Lines

☐ Areas

☐ Files

☐ Observation

☐ Stops

☐ Processing vector

☐ Repeat vector

☐ Adjusted vector

Report name

Land survey overview

OK

Cancel

I click on OK.

By clicking OK the result comes and shows the adjusted coordinate of the points of observation.

I copy the result to Excel in order to

Software	Degree of Freedom	Significant Level	Upper Limit UL	Complete Statistic Chi (X ²)	Lower Limits Value	Tai Test Critical Value	Variance of Limit Weight	Standard error of Limit Weight
GNSS	3	0.05	9.34840	3.948288	0.215795	1.731770	1.316096	1.147212

Fig. 4.1 and 4.2 below shows the final plotted topographical map of two project site south and eastern parts respectively.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF RESULT

4.1 PRESENTATION OF RESULTS

The researcher identified the southern and eastern part of Dutse as the most affected areas by gully erosions. He therefore chooses a gully site at Zai in the southern part and a gully site at Kargo in the eastern part.

A differential GPS was used to obtain the XYZ coordinate of points at 10m interval covering the gully areas of each site. The coordinate system summary showing the control points, logged points and their corresponding XYZ values was downloaded and printed (see Appendix B).

For example;

‘Name’ stand for the station e.g ‘0055

‘ component’ stands for ‘Easting, Northing and height’ e.g 540000.869,1294297.682 and 449.616.

Finally, the adjusted data were used to produce topographical maps of each of the gully site as shown in figure 4 and figure 5 for Zai and Kargo gully site respectively.

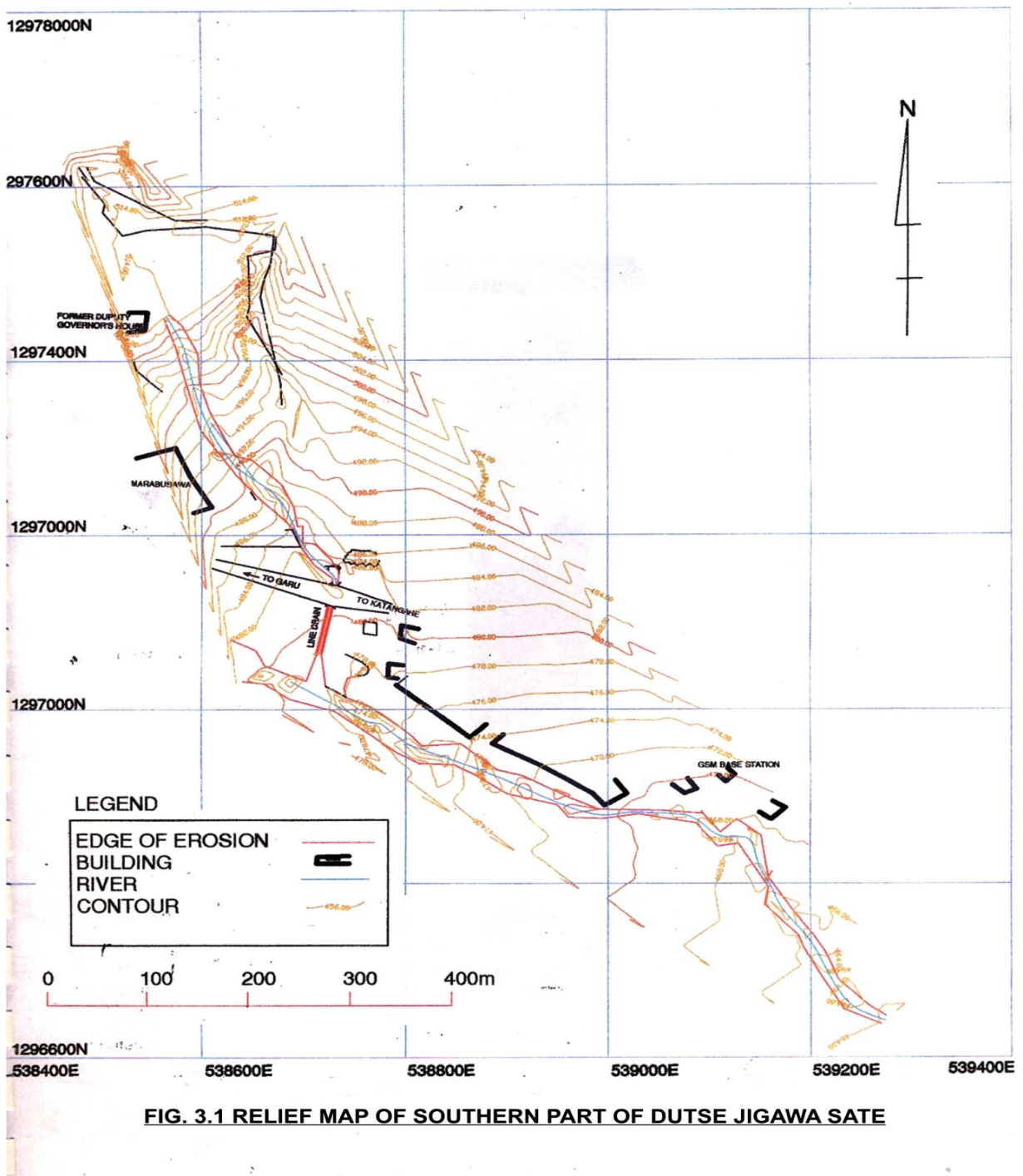
4.2 ANALYSIS OF RESULT

Statistical and adjustment test performed on the raw data obtained from field include:

- (1) The Network Connectivity Test
- (2) The Chi-square Test
- (3) The T-Test

It appears that the value of the computed Ch-square (3.948288) at 95% confidence level ie neither greater than the upper limit (9.348404) nor less than the lower limit (0.215795).

Hence, it can be inferred that the adjustment process has not introduced any significance distortion into the final result. (See Appendix A).



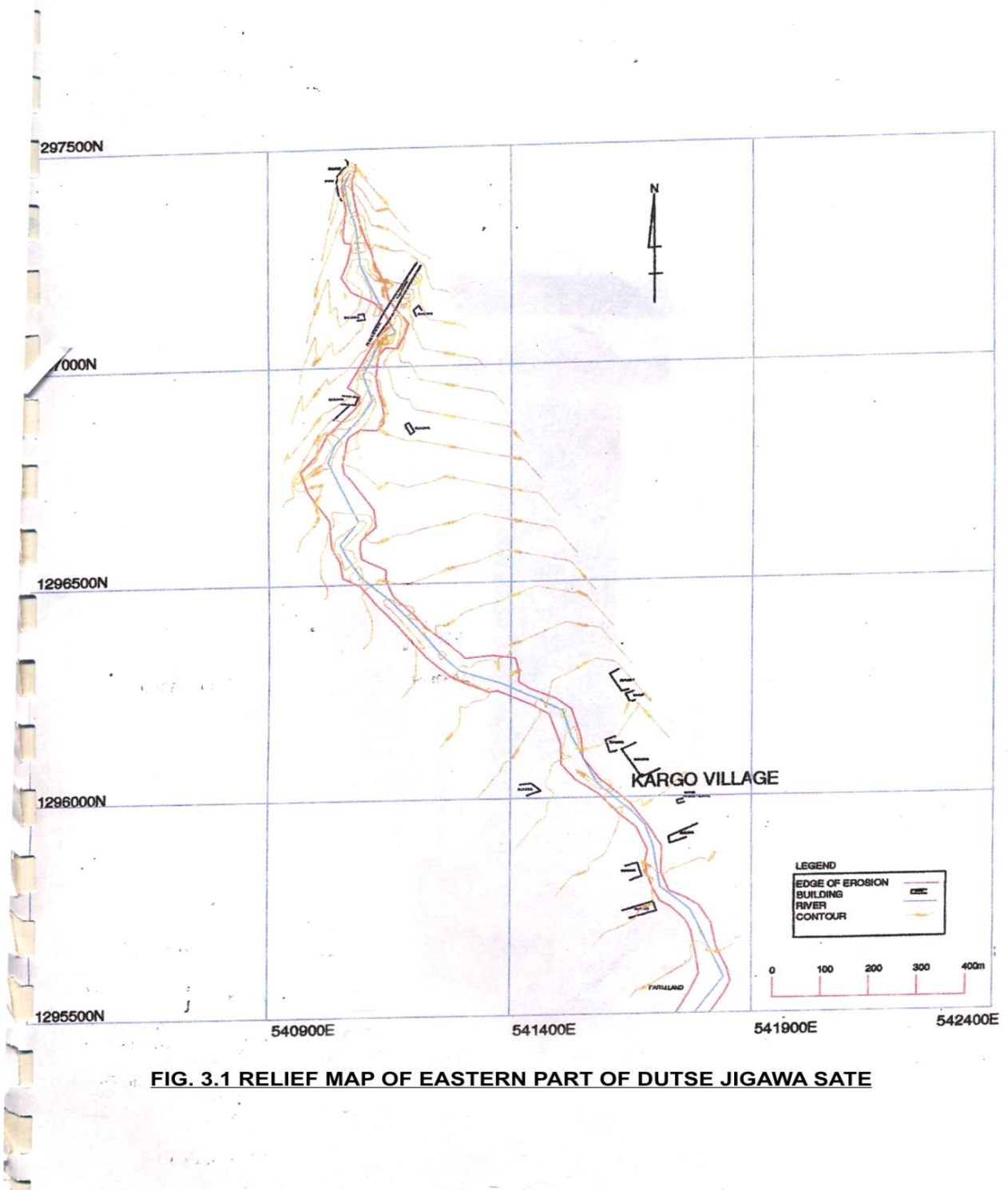


FIG. 3.1 RELIEF MAP OF EASTERN PART OF DUTSE JIGAWA SATE

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This Chapter presents a summary of the major finding of this study, in light of which conclusion are made and some recommendations were suggested.

5.1 SUMMARY

The study examines the cause of gully erosion at Dutse town through surveying perspectives. Data for the study was obtained by measuring the characteristics of length width and depth of the gullies using differential GPS the two gullies Southern and Eastern. The slope of the gullies were computed and tabulated as appropriate.

GPS was also used to obtain the 3-dimensioned XYZ coordinates and was processed using GIS software packages which produce the relief map, digital elevation model as well as the slope map of the study area.

Another factor which found to be a cause of gully erosion at Dutse were the nature of the land form that constitute sandy loam top soil and clayey subsoil which have a high water holding capacity and are easy to be dissolve as they contain abundant sand. Once the water holding capacity of the soil is exceeded landside and slope collapse occur and this leads to gully formations.

5.2 CONCLUSION

The project work has successfully created a topographical map of flood-prone areas of southern and eastern parts of Dutse. The ground technique method of map production provides all the necessary information which can always be updated anytime, anyday and anywhere. It affords easy review and updating wherever need be.

CONTRIBUTION TO KNOWLEDGE

It is no doubt that information contained in this project work respond to the increasingly complex and diverse requirements for planning and decision making towards the development of Dutse. The project work will also serve as a good material in the hands of other academicians who might want to undergo a research on geo information related researcher.

5.3 RECOMMENDATION

Therefore, I wish to recommend that, these maps should be reviewed and updated from time to time since there are many projects that were started after the map was produced. Also many other

projects are to be done in Dutse metropolitan. It is therefore, important for me here, to recommend there, this map produces should always be consulted before decisions on any product site taken in Dutse monoplitan consultant and engineers handling Dutse metropolitan job should be made to have copied of the maps. It is my believe that it will enhance their productivity.

The causes of acceleration gully erosion at Dutse may not really be in adequate land use practice. However people have a nonchalant attitude towards environment degradation and erosion at the nothing is done until it begins to affect their social and economic lives. In this regard, the following recommendations are proffered:-

- 1) Due to the steep nature of the topography and land form, the Jigawa State government should as a matter of urgency, construct along capacity channel drainages of 2m width within the study area so as to discharge water easily to the main river at the right direction.
- 2) The Dutse local government should regulate the removal of sand and clay for construction purposes in which almost 5-10,000 tones of sand and clay are excavated purposes, which tend to increase the gully length, deepen the gully button and widen the gully scarp head at the end result in land degradation and increase the rate of the gully erosion within the study area.
- 3) The Federal government in conjunction with the State and Local Government should set up erosion monitoring and early warning system agency. Similar to the African Real Time Monitoring and Information System (ARTEMIS) operated by NASA and FAO for monitoring rainfall and biomass deficiencies in the country. Such monitoring system will be used to monitor and alert the population in erosion prone areas of the impending dangers.
- 4) With time factor, further researches, monitoring constant documentation and proper analysis of longer period should be carried out since environmental processes like erosion is dynamic.
- 5) A surveyor to be a member of any commission or committee for planning implementation, monitoring or control of major infrastructures social services, natural and any other aspect of monitoring and control of the environmental in the area.
- 6) The attention of the Federal Road Maintenance Agency (FERMA) that takes care of the rehabilitation and maintenance of the Federal Road to which Dutes Yobe road belongs should be drawn by the Jigawa State Government to as a matter of urgency rescue the situation immediately.

REFERENCES

- De Messer, T. (1977): "Criteria for Assessment of Soil" in "Assessing Soil Degradation" Bulletin No.34, Pub. FAO Rome pp.3.
- Harvey, A.M (1994): "Influence of Slope/Stream Coupling of Process Interactions on Eroding Gully Slope. Howgill Fell, Northwest England.
- Harveg, K. (1996): Assessment of Current Erosion Damage, Field Manual, Soil Conservation Research, Programme, Ethiopia and Center for Development and Environmental, University of Berne, pp.69.
- Howard, A.D. & Remson, I. (1978): Geology in Environmental Planning, McGraw Hill, Inc pp.99-91.
- Hynes, H.B.N. (1979): The Ecology of Running Waters, Liverpool University Press, United Kingdom.
- Jenson, S.K. (1991): Application of Hydrologic Information Automatically Extracted for Digital Elevation Model, Hydrologic Process. Journal of Photo Engineering and Remote Sensing 5(i); 3-30.
- Kelley, H.W. (1983): Keeping the Land Alive; Soil Erosion in causes and cures. FAO Soils Bulletin 50, Rome 1983.
- McElroy S. (1992): Getting Started with GPS Erosion Surveying Published by Canadian Institute of Geomatics.
- Pernetta, J.C. (1994): "Coastal Zone Management" Report of the International Symposium on Care Data Wead for Environmental Assessment and Sustainable Development Strategies. Bangkok Thailan Nov. 15-18, 1994.
- Tautscher, O. (2000): Torrent and Erosion Control. Journal of the Nepal Research Center, Vol. 2/ (Science). Pp.147-176.
- Wagley, M.P. (1994): A case Study on Socio-economic Impact of Begnastal rupatal Watershed Management Project, Packhare, Nepal.
- Wischmcier, W.H, Suith, D.D. (1978): Predicting Rainfall Erosion Losses. A Guide to Conversation Planning. US Department of Agriculture, Agriculture Handbook 537.

APPENDIX A

THE RESULT OF STATISTICAL

FILLNET - Ashtech Network Adjustment Package

Copyright © 2002 Thales Navigation all rights reserved.

Tuesday, May 29, 2012 9:32:01 AM

Network connectivity test: passed

Number of sites: 104

Number of vectors: 104

Adjustment type: Minimally constrained

Control sites Constraints

J274 Latitude Longitude Elevation

Adjustment Tests

Confidence level: 95.0%

Number of

obs. equations 316

unknowns 313

degrees of freedom 3

Chi-square test: passed

Lower limit: 0.215795

Upper limit: 9.348404

Chi-square: 3.948288

Variance of Unit Weight: 1.316096

Standard Error of Unit Weight: 1.147212

Critical value for Tau-test: 1.731770

Scale factor for a-priori vector sigmas: 2.00

Reference Ellipsoid Parameters

Equatorial radius (semi-major axis): 6378137.000

Reciprocal of flattening: 298.257223563

Adjusted Datum Bias Parameters

Bias Parameters in Geocentric Cartesian System

Rotation angle (seconds)	Value	Sigma
--------------------------	-------	-------

X	-0.000	fixed
---	--------	-------

Y	-0.000	fixed
---	--------	-------

Z	0.000	fixed
---	-------	-------

Scale correction (ppm)	0.000	fixed
------------------------	-------	-------

Bias Parameters In Mapping Plane Horizontal System

Rotation angle (seconds)	Value	Sigma
--------------------------	-------	-------

Northing	0.000	fixed
----------	-------	-------

Easting	0.000	fixed
---------	-------	-------

Height	0.000	fixed
--------	-------	-------

Scale correction (ppm)	0.000	fixed
------------------------	-------	-------

Ok

APPENDIX B

Land Survey Overview

GNSS Solutions, Copyright (C) 2005 by Thales Navigation, 5/3/2012 3:10:12 PM
www.thalesnavigation.com

Project Name: DATA FOR THE SOUTHERN PART OF DUTSE 2 Project 505

Spatial Reference System: UTM/WGS 84/UTM zone 32N

Time Zone: (GMT+01:00) West Central Africa

Linear Units: Meters

Coordinate System Summary

Coordinate system

Name :	UTM/WGS 84/UTM zone 32N
Type :	Projected
Unit name :	Meters
Meters per unit :	1
Vertical datum :	Ellipsoid
Vertical unit :	Meters
Meters per unit :	1

Datum

Name :	WGS 84
Ellipsoid Name :	WGS 84
Semi-major Axis :	6378137.000 m
Inverse Flattening :	298.257223563
DX to WGS84 :	0.0000 m
DY to WGS84 :	0.0000 m
DZ to WGS84 :	0.0000 m
RX to WGS84 :	0.000000 "
RY to WGS84 :	0.000000 "
RZ to WGS84 :	0.000000 "
ppm to WGS84 :	0.000000000000

Projection

Projection Class :	Transverse_Mercator
latitude_of_origin	0° 00' 00.00000"N
central_meridian	9° 00' 00.00000"E
scale_factor	0.999600000000
false_easting	500000.000 m
false_northing	0.000 m

Control Points	:	1
Reference Points	:	0
Logged Points	:	94
Target Points	:	0
Intermediate Points	:	0

Control Points

<u>Error</u>	Name	Components	95%	Status	Control
			Error		
	J6050	East	539862.870	0.000	FIXED
		North	1294043.794	0.000	FIXED
		Ellips height	450.873	0.000	FIXED

Logged Points

Name	Components	95%	Status
		Error	
0055	East	540000.869	Adjusted
	North	1294297.682	Adjusted
	Ellips height	449.616	Adjusted
0056	East	540010.717	Adjusted
	North	1294299.336	Adjusted
	Ellips height	449.707	Adjusted
0057	East	540019.059	Adjusted
	North	1294301.129	Adjusted
	Ellips height	449.764	Adjusted
0058	East	540028.133	Adjusted
	North	1294302.785	Adjusted
	Ellips height	449.865	Adjusted
0059	East	540037.031	Adjusted
	North	1294304.404	Adjusted
	Ellips height	449.879	Adjusted
0060	East	540042.626	Adjusted
	North	1294304.952	Adjusted
	Ellips height	449.897	Adjusted
0061	East	540049.943	Adjusted
	North	1294299.109	Adjusted
	Ellips height	450.238	Adjusted
0062	East	540053.567	Adjusted
	North	1294292.389	Adjusted
	Ellips height	450.536	Adjusted
0063	East	540043.038	Adjusted
	North	1294282.814	Adjusted
	Ellips height	450.426	Adjusted
0064	East	540040.478	Adjusted
	North	1294295.935	Adjusted
	Ellips height	450.206	Adjusted
0065	East	540037.359	Adjusted
	North	1294297.507	Adjusted
	Ellips height	449.950	Adjusted
0066	East	540019.243	Adjusted
	North	1294294.095	Adjusted
	Ellips height	449.809	Adjusted
0067	East	540010.242	Adjusted
	North	1294292.129	Adjusted
	Ellips height	449.777	Adjusted
0068	East	540001.156	Adjusted
	North	1294290.481	Adjusted
	Ellips height	449.741	Adjusted

0069	East	539991.872	0.156	Adjusted
	North	1294288.400	0.088	Adjusted
	Ellips height	449.666	0.149	Adjusted
0070	East	539984.563	0.137	Adjusted
	North	1294287.048	0.083	Adjusted
	Ellips height	450.473	0.134	Adjusted
0071	East	539980.039	0.145	Adjusted
	North	1294277.691	0.085	Adjusted
	Ellips height	450.464	0.139	Adjusted
0072	East	539990.558	0.092	Adjusted
	North	1294279.517	0.078	Adjusted
	Ellips height	449.664	0.120	Adjusted
0073	East	539999.622	0.090	Adjusted
	North	1294281.303	0.077	Adjusted
	Ellips height	449.729	0.114	Adjusted
0074	East	540008.641	0.144	Adjusted
	North	1294283.006	0.085	Adjusted
	Ellips height	449.805	0.139	Adjusted
0075	East	540018.045	0.144	Adjusted
	North	1294284.523	0.085	Adjusted
	Ellips height	449.810	0.138	Adjusted
0076	East	540023.580	0.155	Adjusted
	North	1294285.464	0.088	Adjusted
	Ellips height	450.107	0.148	Adjusted
0077	East	540017.230	0.155	Adjusted
	North	1294275.248	0.088	Adjusted
	Ellips height	449.745	0.146	Adjusted
0078	East	540007.704	0.155	Adjusted
	North	1294273.328	0.088	Adjusted
	Ellips height	449.709	0.146	Adjusted
0079	East	539997.963	0.155	Adjusted
	North	1294271.598	0.089	Adjusted
	Ellips height	449.647	0.149	Adjusted
0080	East	539988.071	0.155	Adjusted
	North	1294270.042	0.088	Adjusted
	Ellips height	449.593	0.148	Adjusted
0081	East	539978.342	0.144	Adjusted
	North	1294268.139	0.084	Adjusted
	Ellips height	450.417	0.137	Adjusted
0082	East	539978.364	0.136	Adjusted
	North	1294257.214	0.082	Adjusted
	Ellips height	450.363	0.133	Adjusted
0083	East	539988.297	0.195	Adjusted
	North	1294259.993	0.154	Adjusted
	Ellips height	448.985	0.301	Adjusted
0084	East	539998.400	0.214	Adjusted
	North	1294262.590	0.166	Adjusted
	Ellips height	449.357	0.337	Adjusted
0085	East	540007.367	0.213	Adjusted
	North	1294264.736	0.167	Adjusted
	Ellips height	449.451	0.336	Adjusted
0086	East	540016.287	0.182	Adjusted
	North	1294266.580	0.145	Adjusted
	Ellips height	449.699	0.277	Adjusted

0087	East	540011.316	0.182	Adjusted
	North	1294257.648	0.145	Adjusted
	Ellips height	449.555	0.276	Adjusted
0088	East	540001.716	0.213	Adjusted
	North	1294254.560	0.167	Adjusted
	Ellips height	449.314	0.332	Adjusted
0089	East	539992.435	0.214	Adjusted
	North	1294251.235	0.167	Adjusted
	Ellips height	449.075	0.331	Adjusted
0090	East	539985.330	0.200	Adjusted
	North	1294248.911	0.157	Adjusted
	Ellips height	450.085	0.269	Adjusted
0091	East	539991.213	0.178	Adjusted
	North	1294240.521	0.142	Adjusted
	Ellips height	449.807	0.182	Adjusted
0092	East	540000.257	0.206	Adjusted
	North	1294244.136	0.163	Adjusted
	Ellips height	449.384	0.215	Adjusted
0093	East	540009.068	0.206	Adjusted
	North	1294248.047	0.163	Adjusted
	Ellips height	449.930	0.215	Adjusted
0094	East	540013.021	0.177	Adjusted
	North	1294239.397	0.142	Adjusted
	Ellips height	449.754	0.181	Adjusted
0095	East	540003.462	0.188	Adjusted
	North	1294235.603	0.151	Adjusted
	Ellips height	449.312	0.193	Adjusted
0096	East	539992.841	0.188	Adjusted
	North	1294231.307	0.151	Adjusted
	Ellips height	449.844	0.193	Adjusted
0097	East	539995.761	0.176	Adjusted
	North	1294221.747	0.142	Adjusted
	Ellips height	449.720	0.179	Adjusted
0098	East	540004.867	0.182	Adjusted
	North	1294225.516	0.150	Adjusted
	Ellips height	449.243	0.199	Adjusted
0099	East	540013.660	0.198	Adjusted
	North	1294228.834	0.163	Adjusted
	Ellips height	449.724	0.225	Adjusted
0100	East	540023.574	0.180	Adjusted
	North	1294224.404	0.149	Adjusted
	Ellips height	450.470	0.198	Adjusted
0101	East	540007.741	0.167	Adjusted
	North	1294214.300	0.141	Adjusted
	Ellips height	449.897	0.178	Adjusted
0102	East	540013.137	0.198	Adjusted
	North	1294203.475	0.169	Adjusted
	Ellips height	450.144	0.202	Adjusted
0103	East	540009.581	0.171	Adjusted
	North	1294219.524	0.152	Adjusted
	Ellips height	449.785	0.116	Adjusted
0104	East	540000.090	0.169	Adjusted
	North	1294216.266	0.152	Adjusted
	Ellips height	449.133	0.112	Adjusted

0105	East	539990.329	0.169	Adjusted
	North	1294212.880	0.152	Adjusted
	Ellips height	449.583	0.111	Adjusted
0106	East	539986.704	0.159	Adjusted
	North	1294203.534	0.143	Adjusted
	Ellips height	449.456	0.117	Adjusted
0107	East	539996.240	0.166	Adjusted
	North	1294205.286	0.151	Adjusted
	Ellips height	449.109	0.117	Adjusted
0108	East	540005.120	0.243	Adjusted
	North	1294206.392	0.211	Adjusted
	Ellips height	449.398	0.219	Adjusted
0109	East	540008.085	0.114	Adjusted
	North	1294206.802	0.078	Adjusted
	Ellips height	450.046	0.182	Adjusted
0110	East	540001.910	0.020	Adjusted
	North	1294196.603	0.010	Adjusted
	Ellips height	449.537	0.041	Adjusted
0111	East	539992.195	0.027	Adjusted
	North	1294195.118	0.016	Adjusted
	Ellips height	449.061	0.055	Adjusted
0112	East	539982.829	0.022	Adjusted
	North	1294194.623	0.012	Adjusted
	Ellips height	449.253	0.046	Adjusted
0113	East	539974.568	0.019	Adjusted
	North	1294189.496	0.011	Adjusted
	Ellips height	449.294	0.039	Adjusted
0114	East	539984.578	0.021	Adjusted
	North	1294188.924	0.011	Adjusted
	Ellips height	448.849	0.046	Adjusted
0115	East	539994.104	0.034	Adjusted
	North	1294187.789	0.020	Adjusted
	Ellips height	449.691	0.063	Adjusted
0116	East	539988.049	0.017	Adjusted
	North	1294178.976	0.011	Adjusted
	Ellips height	449.752	0.036	Adjusted
0117	East	539978.428	0.023	Adjusted
	North	1294181.489	0.013	Adjusted
	Ellips height	448.893	0.044	Adjusted
0118	East	539968.933	0.018	Adjusted
	North	1294183.734	0.010	Adjusted
	Ellips height	448.977	0.036	Adjusted
0119	East	539965.332	0.029	Adjusted
	North	1294185.184	0.017	Adjusted
	Ellips height	449.353	0.059	Adjusted
0120	East	539958.967	0.023	Adjusted
	North	1294179.348	0.013	Adjusted
	Ellips height	449.241	0.045	Adjusted
0121	East	539967.371	0.022	Adjusted
	North	1294175.727	0.012	Adjusted
	Ellips height	448.779	0.043	Adjusted
0122	East	539976.774	0.022	Adjusted
	North	1294171.234	0.013	Adjusted
	Ellips height	449.608	0.044	Adjusted

0123	East	539967.488	0.021	Adjusted
	North	1294166.232	0.013	Adjusted
	Ellips height	449.645	0.041	Adjusted
0124	East	539959.827	0.037	Adjusted
	North	1294173.070	0.019	Adjusted
	Ellips height	448.634	0.066	Adjusted
0125	East	539953.144	0.023	Adjusted
	North	1294179.064	0.014	Adjusted
	Ellips height	448.852	0.047	Adjusted
0126	East	539949.743	0.017	Adjusted
	North	1294181.953	0.010	Adjusted
	Ellips height	449.188	0.033	Adjusted
0127	East	539940.012	0.015	Adjusted
	North	1294182.062	0.009	Adjusted
	Ellips height	449.039	0.028	Adjusted
0128	East	539946.945	0.017	Adjusted
	North	1294174.481	0.009	Adjusted
	Ellips height	448.518	0.035	Adjusted
0129	East	539952.069	0.022	Adjusted
	North	1294169.106	0.012	Adjusted
	Ellips height	449.419	0.046	Adjusted
0130	East	539942.863	0.011	Adjusted
	North	1294166.248	0.006	Adjusted
	Ellips height	449.297	0.023	Adjusted
0131	East	539936.012	0.016	Adjusted
	North	1294174.389	0.011	Adjusted
	Ellips height	448.573	0.032	Adjusted
0132	East	539930.006	0.020	Adjusted
	North	1294181.207	0.014	Adjusted
	Ellips height	448.871	0.040	Adjusted
0133	East	539920.761	0.016	Adjusted
	North	1294179.941	0.010	Adjusted
	Ellips height	448.832	0.030	Adjusted
0134	East	539926.953	0.025	Adjusted
	North	1294172.536	0.016	Adjusted
	Ellips height	448.561	0.049	Adjusted
0135	East	539932.953	0.020	Adjusted
	North	1294165.226	0.013	Adjusted
	Ellips height	449.122	0.038	Adjusted
0136	East	539923.609	0.015	Adjusted
	North	1294162.149	0.010	Adjusted
	Ellips height	449.212	0.029	Adjusted
0137	East	539917.760	0.017	Adjusted
	North	1294170.172	0.012	Adjusted
	Ellips height	448.584	0.032	Adjusted
0138	East	539911.305	0.020	Adjusted
	North	1294178.612	0.013	Adjusted
	Ellips height	448.802	0.038	Adjusted
0139	East	539901.000	0.012	Adjusted
	North	1294178.464	0.007	Adjusted
	Ellips height	448.883	0.021	Adjusted
0140	East	539906.675	0.019	Adjusted
	North	1294170.063	0.012	Adjusted
	Ellips height	448.541	0.035	Adjusted

0141	East	539911.876	0.018	Adjusted
	North	1294162.688	0.012	Adjusted
	Ellips height	448.597	0.034	Adjusted
0142	East	539916.599	0.022	Adjusted
	North	1294154.675	0.015	Adjusted
	Ellips height	449.224	0.043	Adjusted
0143	East	539908.187	0.016	Adjusted
	North	1294149.541	0.012	Adjusted
	Ellips height	449.273	0.030	Adjusted
0144	East	539902.440	0.017	Adjusted
	North	1294157.939	0.013	Adjusted
	Ellips height	449.032	0.033	Adjusted
0145	East	539897.358	0.018	Adjusted
	North	1294166.347	0.013	Adjusted
	Ellips height	448.528	0.033	Adjusted
0146	East	539892.040	0.096	Adjusted
	North	1294174.692	0.083	Adjusted
	Ellips height	448.425	0.110	Adjusted
0147	East	539890.564	0.096	Adjusted
	North	1294177.546	0.081	Adjusted
	Ellips height	449.177	0.126	Adjusted
BROBAA12	East	538839.593	98.000	Estimated
	North	1296156.163	98.000	Estimated
	Ellips height	473.715	98.000	Estimated

Files

Name	Start Time	Sampling	Epochs	Size (Kb)	Type
BROBAA12.124	12/05/03 10:48	5	1407	702	L1 GPS
BMASTA12.124	12/05/03 11:33	5	1607	811	L1 GPS

Observations

Name	Site	Antenna Type	Antenna Height	Height Type	Receiver Type	Start Time	File
BROBAA12		110454	2.000	Vertical	PROMARK3	12/05/03 10:48:00	
BROBAA12.124							
J6050		110454	1.514	Slant	PROMARK3	12/05/03 11:33:10	
BMASTA12.124							

Stops

Point	Start Time			Time span	File
0001	May 3	2012	10:48:00.00	00:00:30.00	BROBAA12.124
0003	May 3	2012	10:49:45.00	00:00:25.00	BROBAA12.124
0004	May 3	2012	10:50:25.00	00:00:25.00	BROBAA12.124
0005	May 3	2012	10:51:15.00	00:00:25.00	BROBAA12.124
0006	May 3	2012	10:53:10.00	00:00:30.00	BROBAA12.124
0007	May 3	2012	10:53:55.00	00:00:25.00	BROBAA12.124
0008	May 3	2012	10:54:40.00	00:00:20.00	BROBAA12.124
0009	May 3	2012	10:55:20.00	00:00:30.00	BROBAA12.124
0011	May 3	2012	10:56:35.00	00:01:05.00	BROBAA12.124
0012	May 3	2012	10:58:00.00	00:00:25.00	BROBAA12.124

0013	May	3	2012	10:58:45.00	00:00:20.00	BROBAA12.124
0014	May	3	2012	10:59:25.00	00:00:20.00	BROBAA12.124
0015	May	3	2012	11:00:05.00	00:00:20.00	BROBAA12.124
0017	May	3	2012	11:01:30.00	00:00:25.00	BROBAA12.124
0018	May	3	2012	11:03:25.00	00:00:30.00	BROBAA12.124
0019	May	3	2012	11:04:10.00	00:00:05.00	BROBAA12.124
0019	May	3	2012	11:04:20.00	00:00:20.00	BROBAA12.124
0020	May	3	2012	11:05:00.00	00:00:25.00	BROBAA12.124
0021	May	3	2012	11:05:40.00	00:00:20.00	BROBAA12.124
0022	May	3	2012	11:06:20.00	00:00:20.00	BROBAA12.124
0023	May	3	2012	11:07:05.00	00:00:25.00	BROBAA12.124
0024	May	3	2012	11:07:50.00	00:00:30.00	BROBAA12.124
0026	May	3	2012	11:09:15.00	00:00:30.00	BROBAA12.124
0027	May	3	2012	11:10:05.00	00:00:30.00	BROBAA12.124
0028	May	3	2012	11:10:55.00	00:00:25.00	BROBAA12.124
0029	May	3	2012	11:11:40.00	00:00:20.00	BROBAA12.124
0030	May	3	2012	11:12:20.00	00:00:20.00	BROBAA12.124
0031	May	3	2012	11:12:55.00	00:00:25.00	BROBAA12.124
0032	May	3	2012	11:14:30.00	00:00:20.00	BROBAA12.124
0033	May	3	2012	11:15:10.00	00:00:20.00	BROBAA12.124
0034	May	3	2012	11:15:50.00	00:00:25.00	BROBAA12.124
0035	May	3	2012	11:16:35.00	00:00:20.00	BROBAA12.124
0036	May	3	2012	11:17:15.00	00:00:20.00	BROBAA12.124
0037	May	3	2012	11:17:55.00	00:00:30.00	BROBAA12.124
0038	May	3	2012	11:18:50.00	00:00:20.00	BROBAA12.124
0039	May	3	2012	11:19:30.00	00:00:20.00	BROBAA12.124
0040	May	3	2012	11:20:10.00	00:00:20.00	BROBAA12.124
0041	May	3	2012	11:21:05.00	00:00:30.00	BROBAA12.124
0042	May	3	2012	11:21:55.00	00:00:25.00	BROBAA12.124
0043	May	3	2012	11:23:25.00	00:00:25.00	BROBAA12.124
0044	May	3	2012	11:24:25.00	00:00:25.00	BROBAA12.124
0045	May	3	2012	11:25:10.00	00:00:20.00	BROBAA12.124
0046	May	3	2012	11:25:50.00	00:00:20.00	BROBAA12.124
0047	May	3	2012	11:26:35.00	00:00:20.00	BROBAA12.124
0048	May	3	2012	11:27:20.00	00:00:20.00	BROBAA12.124
0049	May	3	2012	11:27:55.00	00:00:30.00	BROBAA12.124
0050	May	3	2012	11:28:40.00	00:00:25.00	BROBAA12.124
0051	May	3	2012	11:29:25.00	00:00:20.00	BROBAA12.124
0052	May	3	2012	11:30:05.00	00:00:25.00	BROBAA12.124
0053	May	3	2012	11:30:45.00	00:00:20.00	BROBAA12.124
0054	May	3	2012	11:32:00.00	00:00:20.00	BROBAA12.124
0055	May	3	2012	11:33:00.00	00:00:05.00	BROBAA12.124
0055	May	3	2012	11:33:10.00	00:00:20.00	BROBAA12.124
0056	May	3	2012	11:33:50.00	00:00:25.00	BROBAA12.124
0057	May	3	2012	11:34:45.00	00:00:20.00	BROBAA12.124
0058	May	3	2012	11:35:25.00	00:00:25.00	BROBAA12.124
0059	May	3	2012	11:36:10.00	00:00:25.00	BROBAA12.124
0060	May	3	2012	11:36:50.00	00:00:20.00	BROBAA12.124
0061	May	3	2012	11:37:30.00	00:00:25.00	BROBAA12.124
0062	May	3	2012	11:38:15.00	00:00:20.00	BROBAA12.124
0063	May	3	2012	11:39:00.00	00:00:20.00	BROBAA12.124
0064	May	3	2012	11:39:45.00	00:00:25.00	BROBAA12.124
0065	May	3	2012	11:40:20.00	00:00:30.00	BROBAA12.124
0066	May	3	2012	11:41:55.00	00:00:20.00	BROBAA12.124
0067	May	3	2012	11:42:55.00	00:00:20.00	BROBAA12.124
0068	May	3	2012	11:43:35.00	00:00:25.00	BROBAA12.124
0069	May	3	2012	11:44:20.00	00:00:20.00	BROBAA12.124
0070	May	3	2012	11:44:55.00	00:00:30.00	BROBAA12.124
0071	May	3	2012	11:45:50.00	00:00:25.00	BROBAA12.124
0072	May	3	2012	11:47:15.00	00:00:20.00	BROBAA12.124
0073	May	3	2012	11:47:55.00	00:00:25.00	BROBAA12.124
0074	May	3	2012	11:48:35.00	00:00:25.00	BROBAA12.124
0075	May	3	2012	11:49:15.00	00:00:25.00	BROBAA12.124
0076	May	3	2012	11:50:05.00	00:00:20.00	BROBAA12.124
0077	May	3	2012	11:50:50.00	00:00:20.00	BROBAA12.124
0078	May	3	2012	11:51:30.00	00:00:20.00	BROBAA12.124
0079	May	3	2012	11:52:15.00	00:00:20.00	BROBAA12.124
0080	May	3	2012	11:52:55.00	00:00:20.00	BROBAA12.124
0081	May	3	2012	11:53:30.00	00:00:25.00	BROBAA12.124
0082	May	3	2012	11:54:15.00	00:00:30.00	BROBAA12.124
0083	May	3	2012	11:55:45.00	00:00:25.00	BROBAA12.124
0084	May	3	2012	11:56:30.00	00:00:20.00	BROBAA12.124

0085	May	3	2012	11:57:10.00	00:00:20.00	BROBAA12.124
0086	May	3	2012	11:57:50.00	00:00:30.00	BROBAA12.124
0087	May	3	2012	11:58:40.00	00:00:30.00	BROBAA12.124
0088	May	3	2012	11:59:30.00	00:00:20.00	BROBAA12.124
0089	May	3	2012	12:00:10.00	00:00:20.00	BROBAA12.124
0090	May	3	2012	12:00:45.00	00:00:25.00	BROBAA12.124
0091	May	3	2012	12:01:30.00	00:00:30.00	BROBAA12.124
0092	May	3	2012	12:02:40.00	00:00:20.00	BROBAA12.124
0093	May	3	2012	12:03:20.00	00:00:20.00	BROBAA12.124
0094	May	3	2012	12:04:00.00	00:00:30.00	BROBAA12.124
0095	May	3	2012	12:04:55.00	00:00:25.00	BROBAA12.124
0096	May	3	2012	12:05:40.00	00:00:25.00	BROBAA12.124
0097	May	3	2012	12:06:25.00	00:00:30.00	BROBAA12.124
0098	May	3	2012	12:07:30.00	00:00:25.00	BROBAA12.124
0099	May	3	2012	12:08:15.00	00:00:20.00	BROBAA12.124
0100	May	3	2012	12:09:05.00	00:00:25.00	BROBAA12.124
0101	May	3	2012	12:10:00.00	00:00:30.00	BROBAA12.124
0102	May	3	2012	12:10:55.00	00:00:20.00	BROBAA12.124
0103	May	3	2012	12:11:40.00	00:00:25.00	BROBAA12.124
0104	May	3	2012	12:12:25.00	00:00:25.00	BROBAA12.124
0105	May	3	2012	12:13:05.00	00:00:25.00	BROBAA12.124
0106	May	3	2012	12:13:55.00	00:00:30.00	BROBAA12.124
0107	May	3	2012	12:15:05.00	00:00:25.00	BROBAA12.124
0108	May	3	2012	12:15:50.00	00:00:20.00	BROBAA12.124
0109	May	3	2012	12:16:20.00	00:00:30.00	BROBAA12.124
0110	May	3	2012	12:17:35.00	00:00:25.00	BROBAA12.124
0111	May	3	2012	12:18:30.00	00:00:20.00	BROBAA12.124
0112	May	3	2012	12:19:10.00	00:00:20.00	BROBAA12.124
0113	May	3	2012	12:20:15.00	00:00:25.00	BROBAA12.124
0114	May	3	2012	12:20:55.00	00:00:25.00	BROBAA12.124
0115	May	3	2012	12:21:40.00	00:00:20.00	BROBAA12.124
0116	May	3	2012	12:22:35.00	00:00:30.00	BROBAA12.124
0117	May	3	2012	12:23:25.00	00:00:20.00	BROBAA12.124
0118	May	3	2012	12:24:05.00	00:00:25.00	BROBAA12.124
0119	May	3	2012	12:24:45.00	00:00:25.00	BROBAA12.124
0120	May	3	2012	12:25:35.00	00:00:20.00	BROBAA12.124
0121	May	3	2012	12:26:40.00	00:00:20.00	BROBAA12.124
0122	May	3	2012	12:27:20.00	00:00:20.00	BROBAA12.124
0123	May	3	2012	12:28:05.00	00:00:20.00	BROBAA12.124
0124	May	3	2012	12:28:45.00	00:00:20.00	BROBAA12.124
0125	May	3	2012	12:29:25.00	00:00:25.00	BROBAA12.124
0126	May	3	2012	12:30:10.00	00:00:25.00	BROBAA12.124
0127	May	3	2012	12:31:05.00	00:00:25.00	BROBAA12.124
0128	May	3	2012	12:32:10.00	00:00:25.00	BROBAA12.124
0129	May	3	2012	12:32:50.00	00:00:25.00	BROBAA12.124
0130	May	3	2012	12:33:40.00	00:00:25.00	BROBAA12.124
0131	May	3	2012	12:34:25.00	00:00:25.00	BROBAA12.124
0132	May	3	2012	12:35:10.00	00:00:20.00	BROBAA12.124
0133	May	3	2012	12:35:50.00	00:00:25.00	BROBAA12.124
0134	May	3	2012	12:37:00.00	00:00:20.00	BROBAA12.124
0135	May	3	2012	12:37:45.00	00:00:20.00	BROBAA12.124
0136	May	3	2012	12:38:35.00	00:00:25.00	BROBAA12.124
0137	May	3	2012	12:39:25.00	00:00:25.00	BROBAA12.124
0138	May	3	2012	12:40:10.00	00:00:20.00	BROBAA12.124
0139	May	3	2012	12:40:50.00	00:00:30.00	BROBAA12.124
0140	May	3	2012	12:42:05.00	00:00:20.00	BROBAA12.124
0141	May	3	2012	12:42:50.00	00:00:20.00	BROBAA12.124
0142	May	3	2012	12:43:30.00	00:00:20.00	BROBAA12.124
0143	May	3	2012	12:44:00.00	00:00:05.00	BROBAA12.124
0144	May	3	2012	12:44:10.00	00:00:20.00	BROBAA12.124
0145	May	3	2012	12:44:55.00	00:00:20.00	BROBAA12.124
0146	May	3	2012	12:45:35.00	00:00:20.00	BROBAA12.124
0147	May	3	2012	12:46:15.00	00:00:20.00	BROBAA12.124
	May	3	2012	12:46:45.00	00:00:30.00	BROBAA12.124

Processes

Reference	Reference File	Rover	Rover File	Mode	Num
J6050	BMASTA12.124	BROBAA12	BROBAA12.124	Stop & Go	1

Processed vectors

Vector Identifier	Vector Length	95% Error	Vector Components	95% Error	SV	PDOP	QA
<u>Solution</u>							
J6050- 0091	234.999	0.326	X -61.336	0.153	11	1.3	No
Float							
12/05/03 12:01			Y 120.278	0.124			
			Z 192.343	0.117			
J6050- 0080	258.699	0.259	X -66.952	0.105	10	1.5	No
Float							
12/05/03 11:52			Y 116.204	0.124			
			Z 221.222	0.082			
J6050- 0081	252.432	0.241	X -64.193	0.097	10	1.5	No
Float							
12/05/03 11:53			Y 106.792	0.115			
			Z 219.538	0.078			
J6050- 0082	242.776	0.232	X -62.058	0.094	10	1.5	No
Float							
12/05/03 11:54			Y 107.152	0.109			
			Z 208.824	0.076			
J6050- 0083	250.068	0.437	X -65.561	0.238	10	1.5	No
Float							
12/05/03 11:55			Y 116.650	0.147			
			Z 211.255	0.127			
J6050- 0084	257.492	0.483	X -67.365	0.265	10	1.5	No
Float							
12/05/03 11:56			Y 126.599	0.161			
			Z 213.861	0.137			
J6050- 0085	264.120	0.483	X -69.162	0.265	10	1.5	No
Float							
12/05/03 11:57			Y 135.398	0.161			
			Z 215.971	0.137			
J6050- 0086	270.625	0.405	X -70.743	0.218	10	1.5	No
Float							
12/05/03 11:57			Y 144.184	0.138			
			Z 217.817	0.120			
J6050- 0087	260.447	0.404	X -68.283	0.217	11	1.3	No
Float							
12/05/03 11:58			Y 139.538	0.138			
			Z 209.044	0.120			
J6050- 0088	252.509	0.479	X -66.336	0.262	11	1.3	No
Float							
12/05/03 11:59			Y 130.121	0.161			
			Z 205.982	0.137			
J6050- 0101	223.844	0.315	X -58.679	0.144	11	1.3	No
Float							
12/05/03 12:10			Y 137.440	0.120			
			Z 166.653	0.118			
J6050- 0090	239.001	0.414	X -61.794	0.214	11	1.3	No
Float							
12/05/03 12:00			Y 114.248	0.132			
			Z 200.626	0.146			

J6050- 0077	278.333	0.258	X	-72.590	0.103	10	1.5	No
Float								
12/05/03 11:50			Y	144.847	0.124			
			Z	226.317	0.082			
J6050- 0092	243.039	0.380	X	-63.940	0.180	11	1.3	No
Float								
12/05/03 12:02			Y	129.023	0.143			
			Z	195.787	0.135			
J6050- 0093	251.298	0.379	X	-65.629	0.180	11	1.3	No
Float								
12/05/03 12:03			Y	137.683	0.143			
			Z	199.717	0.135			
J452 - 0094	246.702	0.325	X	-64.707	0.151	11	1.3	No
Float								
12/05/03 12:04			Y	141.832	0.124			
			Z	191.203	0.118			
J452 - 0095	237.930	0.346	X	-62.820	0.162	11	1.3	No
Float								
12/05/03 12:04			Y	132.447	0.131			
			Z	187.409	0.125			
J452 - 0096	228.257	0.345	X	-59.718	0.161	11	1.3	No
Float								
12/05/03 12:05			Y	122.183	0.131			
			Z	183.321	0.125			
J452 - 0097	222.201	0.323	X	-58.395	0.149	11	1.3	No
Float								
12/05/03 12:06			Y	125.349	0.123			
			Z	173.927	0.118			
J452 - 0098	230.731	0.345	X	-61.093	0.161	11	1.3	No
Float								
12/05/03 12:07			Y	134.143	0.129			
			Z	177.511	0.128			
J452 - 0099	238.810	0.382	X	-62.723	0.180	11	1.3	No
Float								
12/05/03 12:08			Y	142.794	0.140			
			Z	180.848	0.141			
J452 - 0055	289.102	0.238	X	-74.553	0.092	8	1.9	No
Float								
12/05/03 11:33			Y	127.963	0.117			
			Z	248.288	0.076			
J452 - 0089	244.696	0.479	X	-64.390	0.261	11	1.3	No
Float								
12/05/03 12:00			Y	121.026	0.162			
			Z	202.689	0.138			
J452 - 0067	288.904	0.262	X	-74.808	0.107	9	1.8	No
Float								
12/05/03 11:42			Y	137.418	0.125			
			Z	242.869	0.081			
J452 - 0056	295.365	0.243	X	-76.398	0.097	9	1.8	No
Float								
12/05/03 11:33			Y	137.647	0.118			
			Z	249.914	0.077			
J452 - 0057	301.163	0.258	X	-78.058	0.101	9	1.8	No
Float								
12/05/03 11:34			Y	145.834	0.127			
			Z	251.672	0.080			

J452 - 0058	307.368	0.241	X	-79.768	0.094	9	1.8	No
Float								
12/05/03 11:35			Y	154.755	0.117			
			Z	253.304	0.077			
J452 - 0059	313.591	0.243	X	-81.525	0.097	9	1.8	No
Float								
12/05/03 11:36			Y	163.489	0.117			
			Z	254.881	0.078			
J452 - 0060	317.186	0.257	X	-82.528	0.101	9	1.8	No
Float								
12/05/03 11:36			Y	168.997	0.126			
			Z	255.414	0.081			
J452 - 0061	316.659	0.244	X	-82.216	0.097	9	1.8	No
Float								
12/05/03 11:37			Y	176.461	0.117			
			Z	249.750	0.078			
J452 - 0062	313.454	0.279	X	-81.170	0.123	9	1.8	No
Float								
12/05/03 11:38			Y	180.299	0.127			
			Z	243.223	0.085			
J452 - 0063	299.453	0.260	X	-77.644	0.105	9	1.8	No
Float								
12/05/03 11:39			Y	170.192	0.126			
			Z	233.834	0.081			
J452 - 0064	308.555	0.188	X	-80.072	0.086	8	2.4	No
Float								
12/05/03 11:39			Y	167.213	0.071			
			Z	246.646	0.071			
J452 - 0079	264.971	0.260	X	-68.820	0.106	10	1.5	No
Float								
12/05/03 11:52			Y	125.928	0.124			
			Z	222.746	0.082			
J452 - 0066	295.267	0.261	X	-76.634	0.106	8	2.4	No
Float								
12/05/03 11:41			Y	146.246	0.125			
			Z	244.790	0.081			
J452 - 0078	271.534	0.258	X	-70.690	0.103	10	1.5	No
Float								
12/05/03 11:51			Y	135.499	0.124			
			Z	224.440	0.082			
J452 - 0068	282.932	0.244	X	-73.035	0.099	9	1.8	No
Float								
12/05/03 11:43			Y	128.495	0.116			
			Z	241.259	0.078			
J452 - 0069	276.666	0.261	X	-71.181	0.106	9	1.8	No
Float								
12/05/03 11:44			Y	119.385	0.125			
			Z	239.217	0.081			
J452 - 0070	272.119	0.234	X	-68.942	0.095	9	1.8	No
Float								
12/05/03 11:44			Y	112.342	0.110			
			Z	238.065	0.076			
J452 - 0071	261.722	0.244	X	-66.338	0.099	9	1.8	No
Float								
12/05/03 11:45			Y	108.172	0.116			
			Z	228.903	0.078			
J452 - 0072	268.208	0.190	X	-69.188	0.089	9	1.8	No
Float								

12/05/03 11:47			Y	118.369	0.070				
			Z	230.516	0.071				
J452 - 0073	274.191	0.184	X	-70.957	0.084	9	1.8	No	
Float									
12/05/03 11:47			Y	127.270	0.069				
			Z	232.268	0.070				
J452 - 0074	280.256	0.243	X	-72.690	0.098	10	1.5	No	
Float									
12/05/03 11:48			Y	136.132	0.116				
			Z	233.940	0.079				
J452 - 0075	286.539	0.242	X	-74.519	0.097	10	1.5	No	
Float									
12/05/03 11:49			Y	145.368	0.115				
			Z	235.414	0.079				
J452 - 0076	290.359	0.259	X	-75.321	0.105	10	1.5	No	
Float									
12/05/03 11:50			Y	150.849	0.124				
			Z	236.389	0.082				
J452 - 0102	219.368	0.369	X	-57.148	0.172	9	1.5	No	
Float									
12/05/03 12:10			Y	143.150	0.142				
			Z	156.091	0.132				
J452 - 0065	308.064	0.189	X	-80.127	0.088	8	2.4	No	
Float									
12/05/03 11:40			Y	164.044	0.071				
			Z	248.138	0.071				
J452 - 0138	143.334	0.050	X	-36.905	0.031	9	1.8	No	
Fixed									
12/05/03 12:40			Y	43.202	0.013				
			Z	131.591	0.011				
J452 - 0127	158.414	0.037	X	-42.034	0.023	9	1.9		
Fixed									
12/05/03 12:31			Y	71.468	0.009				
			Z	134.983	0.008				
J452 - 0128	155.483	0.044	X	-42.144	0.028	9	1.9		
Fixed									
12/05/03 12:32			Y	78.470	0.010				
			Z	127.441	0.010				
J452 - 0129	153.893	0.058	X	-41.028	0.037	9	1.9	No	
Fixed									
12/05/03 12:32			Y	83.843	0.013				
			Z	122.352	0.013				
J452 - 0130	146.341	0.030	X	-39.077	0.019	9	1.9		
Fixed									
12/05/03 12:33			Y	74.826	0.007				
			Z	119.539	0.007				
J452 - 0131	149.768	0.042	X	-40.295	0.026	9	1.9		
Fixed									
12/05/03 12:34			Y	67.689	0.010				
			Z	127.377	0.009				
J452 - 0132	153.019	0.052	X	-40.398	0.032	9	1.9	No	
Fixed									
12/05/03 12:35			Y	61.591	0.013				
			Z	134.124	0.011				
J452 - 0133	148.025	0.039	X	-38.679	0.024	9	1.9		
Fixed									
12/05/03 12:35			Y	52.499	0.010				
			Z	132.888	0.009				

J452 - 0134	143.893	0.064	X	-38.463	0.039	9	1.9	No
Fixed								
12/05/03 12:37			Y	58.803	0.016			
			Z	125.570	0.014			
J452 - 0135	140.279	0.050	X	-37.431	0.031	9	1.9	No
Fixed								
12/05/03 12:37			Y	65.047	0.013			
			Z	118.516	0.011			
J452 - 0100	241.865	0.343	X	-62.725	0.159	11	1.3	No
Float								
12/05/03 12:09			Y	152.840	0.127			
			Z	176.647	0.129			
J452 - 0137	137.865	0.043	X	-36.472	0.026	9	1.8	
Fixed								
12/05/03 12:39			Y	49.807	0.011			
			Z	123.271	0.010			
J452 - 0124	161.684	0.087	X	-43.844	0.054	9	1.9	No
Fixed								
12/05/03 12:28			Y	91.250	0.023			
			Z	126.066	0.017			
J452 - 0139	140.042	0.028	X	-35.121	0.017	9	1.8	
Fixed								
12/05/03 12:40			Y	33.046	0.008			
			Z	131.477	0.006			
J452 - 0140	133.732	0.046	X	-34.690	0.028	9	1.8	No
Fixed								
12/05/03 12:42			Y	38.861	0.013			
			Z	123.170	0.011			
J452 - 0141	128.676	0.045	X	-34.002	0.027	9	1.8	No
Fixed								
12/05/03 12:42			Y	44.238	0.012			
			Z	115.950	0.011			
J452 - 0142	123.279	0.057	X	-32.557	0.034	9	1.8	No
Fixed								
12/05/03 12:43			Y	49.255	0.015			
			Z	108.221	0.013			
J452 - 0143	115.138	0.116	X	-30.128	0.070	9	1.8	No
Fixed								
12/05/03 12:44			Y	41.139	0.032			
			Z	103.231	0.027			
J452 - 0143	115.107	0.043	X	-30.111	0.026	9	1.8	No
Fixed								
12/05/03 12:44			Y	41.119	0.012			
			Z	103.209	0.010			
J452 - 0144	120.878	0.044	X	-31.096	0.027	9	1.8	No
Fixed								
12/05/03 12:44			Y	35.144	0.012			
			Z	111.397	0.010			
J452 - 0145	127.393	0.044	X	-32.442	0.027	9	1.8	No
Fixed								
12/05/03 12:45			Y	29.780	0.012			
			Z	119.539	0.010			
J452 - 0146	134.192	0.188	X	-33.351	0.086	9	1.8	No
Fixed								
12/05/03 12:46			Y	24.248	0.073			
			Z	127.700	0.069			

J452 - 0136	133.101	0.038	X	-35.208	0.023	9	1.9	
Fixed								
12/05/03 12:38			Y	55.936	0.010			
			Z	115.531	0.009			
J452 - 0114	189.505	0.058	X	-50.838	0.036	10	1.5	No
Fixed								
12/05/03 12:20			Y	115.214	0.013			
			Z	141.610	0.012			
J452 - 0103	229.027	0.287	X	-60.134	0.109	11	1.3	No
Float								
12/05/03 12:11			Y	139.072	0.124			
			Z	171.744	0.116			
J452 - 0104	220.506	0.284	X	-58.568	0.105	11	1.3	No
Float								
12/05/03 12:12			Y	129.703	0.124			
			Z	168.433	0.116			
J452 - 0105	211.845	0.283	X	-55.867	0.104	11	1.3	No
Float								
12/05/03 12:13			Y	120.247	0.123			
			Z	165.220	0.116			
J452 - 0106	202.214	0.273	X	-53.527	0.104	11	1.3	No
Float								
12/05/03 12:13			Y	116.944	0.116			
			Z	156.043	0.111			
J452 - 0107	209.547	0.283	X	-55.763	0.105	11	1.3	No
Float								
12/05/03 12:15			Y	126.247	0.122			
			Z	157.677	0.116			
J452 - 0108	216.143	0.435	X	-57.150	0.183	11	1.3	No
Float								
12/05/03 12:15			Y	135.024	0.177			
			Z	158.808	0.169			
J452 - 0109	218.410	0.256	X	-57.087	0.146	11	1.3	No
Fixed								
12/05/03 12:16			Y	138.041	0.081			
			Z	159.337	0.066			
J452 - 0110	206.696	0.053	X	-54.531	0.033	11	1.3	No
Fixed								
12/05/03 12:17			Y	132.188	0.012			
			Z	149.250	0.011			
J452 - 0111	199.156	0.071	X	-53.113	0.044	11	1.3	No
Fixed								
12/05/03 12:18			Y	122.570	0.016			
			Z	147.712	0.017			
J452 - 0126	163.284	0.044	X	-43.450	0.027	9	1.9	
Fixed								
12/05/03 12:30			Y	81.101	0.011			
			Z	134.894	0.009			
J452 - 0113	183.680	0.050	X	-48.895	0.031	11	1.3	No
Fixed								
12/05/03 12:20			Y	105.385	0.012			
			Z	142.274	0.011			
J452 - 0125	162.713	0.061	X	-43.748	0.038	9	1.9	No
Fixed								
12/05/03 12:29			Y	84.497	0.015			
			Z	131.992	0.013			
J452 - 0115	194.917	0.084	X	-51.346	0.052	11	1.3	No
Fixed								

12/05/03 12:21			Y	124.787	0.021			
			Z	140.657	0.016			
J452 - 0116	184.325	0.046	X	-48.535	0.029	11	1.3	
Fixed								
12/05/03 12:22			Y	119.100	0.010			
			Z	132.043	0.009			
J452 - 0117	179.852	0.057	X	-48.305	0.036	11	1.3	No
Fixed								
12/05/03 12:23			Y	109.386	0.014			
			Z	134.344	0.012			
J452 - 0118	175.682	0.046	X	-47.130	0.029	11	1.3	
Fixed								
12/05/03 12:24			Y	99.955	0.011			
			Z	136.572	0.009			
J452 - 0119	174.698	0.076	X	-46.472	0.048	10	1.5	No
Fixed								
12/05/03 12:24			Y	96.414	0.018			
			Z	138.073	0.016			
J452 - 0120	166.245	0.058	X	-44.376	0.037	10	1.5	No
Fixed								
12/05/03 12:25			Y	90.298	0.014			
			Z	132.341	0.012			
J452 - 0121	168.394	0.056	X	-45.462	0.035	10	1.5	No
Fixed								
12/05/03 12:26			Y	98.635	0.013			
			Z	128.689	0.011			
J452 - 0122	171.006	0.056	X	-45.289	0.035	10	1.5	No
Fixed								
12/05/03 12:27			Y	108.192	0.014			
			Z	124.444	0.012			
J452 - 0123	161.125	0.054	X	-42.741	0.034	10	1.5	No
Fixed								
12/05/03 12:28			Y	99.191	0.014			
			Z	119.564	0.011			
J452 - 0147	136.661	0.199	X	-32.956	0.091	9	1.8	No
Fixed								
12/05/03 12:46			Y	22.821	0.075			
			Z	130.650	0.074			
J452 - 0112	192.810	0.059	X	-51.306	0.037	11	1.3	No
Fixed								
12/05/03 12:19			Y	113.370	0.014			
			Z	147.277	0.013			

Repeat vectors

Repeat Vector		Difference	Length	QA
J452 - 0143	X	-0.017	115.138	No
12/05/03 12:44	Y	0.019		
12/05/03 12:44	Z	0.022		

Adjusted vectors

Vector Identifier	Vector Length	Length Resid.	Vector Components	Resid.	Tau Test	QA
J452 - 0091	234.999	0.000	X -61.336	0.000		No
12/05/03 12:01			Y 120.278	0.000		
			Z 192.343	0.000		
J452 - 0080	258.699	0.000	X -66.952	0.000		No
12/05/03 11:52			Y 116.204	0.000		
			Z 221.222	0.000		
J452 - 0081	252.432	0.000	X -64.193	0.000		No
12/05/03 11:53			Y 106.792	0.000		
			Z 219.538	0.000		
J452 - 0082	242.776	0.000	X -62.058	0.000		No
12/05/03 11:54			Y 107.152	0.000		
			Z 208.824	0.000		
J452 - 0083	250.068	0.000	X -65.561	0.000		No
12/05/03 11:55			Y 116.650	0.000		
			Z 211.255	0.000		
J452 - 0084	257.492	0.000	X -67.365	0.000		No
12/05/03 11:56			Y 126.599	0.000		
			Z 213.861	0.000		
J452 - 0085	264.120	0.000	X -69.162	0.000		No
12/05/03 11:57			Y 135.398	0.000		
			Z 215.971	0.000		
J452 - 0086	270.625	0.000	X -70.743	0.000		No
12/05/03 11:57			Y 144.184	0.000		
			Z 217.817	0.000		
J452 - 0087	260.447	0.000	X -68.283	0.000		No
12/05/03 11:58			Y 139.538	0.000		
			Z 209.044	0.000		
J452 - 0088	252.509	0.000	X -66.336	0.000		No
12/05/03 11:59			Y 130.121	0.000		
			Z 205.982	0.000		
J452 - 0101	223.844	0.000	X -58.679	0.000		No
12/05/03 12:10			Y 137.440	0.000		
			Z 166.653	0.000		
J452 - 0090	239.001	0.000	X -61.794	0.000		No
12/05/03 12:00			Y 114.248	0.000		
			Z 200.626	0.000		
J452 - 0077	278.333	0.000	X -72.590	0.000		No
12/05/03 11:50			Y 144.847	0.000		
			Z 226.317	0.000		
J452 - 0092	243.039	0.000	X -63.940	0.000		No
12/05/03 12:02			Y 129.023	0.000		
			Z 195.787	0.000		
J452 - 0093	251.298	0.000	X -65.629	0.000		No
12/05/03 12:03			Y 137.683	0.000		

			Z	199.717	0.000	
J452 - 0094	246.702	0.000	X	-64.707	0.000	No
12/05/03 12:04			Y	141.832	0.000	
			Z	191.203	0.000	
J452 - 0095	237.930	0.000	X	-62.820	0.000	No
12/05/03 12:04			Y	132.447	0.000	
			Z	187.409	0.000	
J452 - 0096	228.257	0.000	X	-59.718	0.000	No
12/05/03 12:05			Y	122.183	0.000	
			Z	183.321	0.000	
J452 - 0097	222.201	0.000	X	-58.395	0.000	No
12/05/03 12:06			Y	125.349	0.000	
			Z	173.927	0.000	
J452 - 0098	230.731	0.000	X	-61.093	0.000	No
12/05/03 12:07			Y	134.143	0.000	
			Z	177.511	0.000	
J452 - 0099	238.810	0.000	X	-62.723	0.000	No
12/05/03 12:08			Y	142.794	0.000	
			Z	180.848	0.000	
J452 - 0055	289.102	0.000	X	-74.553	0.000	No
12/05/03 11:33			Y	127.963	0.000	
			Z	248.288	0.000	
J452 - 0089	244.696	0.000	X	-64.390	0.000	No
12/05/03 12:00			Y	121.026	0.000	
			Z	202.689	0.000	
J452 - 0067	288.904	0.000	X	-74.808	0.000	No
12/05/03 11:42			Y	137.418	0.000	
			Z	242.869	0.000	
J452 - 0056	295.365	0.000	X	-76.398	0.000	No
12/05/03 11:33			Y	137.647	0.000	
			Z	249.914	0.000	
J452 - 0057	301.163	0.000	X	-78.058	0.000	No
12/05/03 11:34			Y	145.834	0.000	
			Z	251.672	0.000	
J452 - 0058	307.368	0.000	X	-79.768	0.000	No
12/05/03 11:35			Y	154.755	0.000	
			Z	253.304	0.000	
J452 - 0059	313.591	0.000	X	-81.525	0.000	No
12/05/03 11:36			Y	163.489	0.000	
			Z	254.881	0.000	
J452 - 0060	317.186	0.000	X	-82.528	0.000	No
12/05/03 11:36			Y	168.997	0.000	
			Z	255.414	0.000	
J452 - 0061	316.659	0.000	X	-82.216	0.000	No
12/05/03 11:37			Y	176.461	0.000	
			Z	249.750	0.000	
J452 - 0062	313.454	0.000	X	-81.170	0.000	No
12/05/03 11:38			Y	180.299	0.000	
			Z	243.223	0.000	
J452 - 0063	299.453	0.000	X	-77.644	0.000	No
12/05/03 11:39			Y	170.192	0.000	
			Z	233.834	0.000	
J452 - 0064	308.555	0.000	X	-80.072	0.000	No
12/05/03 11:39			Y	167.213	0.000	

			Z	246.646	0.000	
J452 - 0079	264.971	0.000	X	-68.820	0.000	No
12/05/03 11:52			Y	125.928	0.000	
			Z	222.746	0.000	
J452 - 0066	295.267	0.000	X	-76.634	0.000	No
12/05/03 11:41			Y	146.246	0.000	
			Z	244.790	0.000	
J452 - 0078	271.534	0.000	X	-70.690	0.000	No
12/05/03 11:51			Y	135.499	0.000	
			Z	224.440	0.000	
J452 - 0068	282.932	0.000	X	-73.035	0.000	No
12/05/03 11:43			Y	128.495	0.000	
			Z	241.259	0.000	
J452 - 0069	276.666	0.000	X	-71.181	0.000	No
12/05/03 11:44			Y	119.385	0.000	
			Z	239.217	0.000	
J452 - 0070	272.119	0.000	X	-68.942	0.000	No
12/05/03 11:44			Y	112.342	0.000	
			Z	238.065	0.000	
J452 - 0071	261.722	0.000	X	-66.338	0.000	No
12/05/03 11:45			Y	108.172	0.000	
			Z	228.903	0.000	
J452 - 0072	268.208	0.000	X	-69.188	0.000	No
12/05/03 11:47			Y	118.369	0.000	
			Z	230.516	0.000	
J452 - 0073	274.191	0.000	X	-70.957	0.000	No
12/05/03 11:47			Y	127.270	0.000	
			Z	232.268	0.000	
J452 - 0074	280.256	0.000	X	-72.690	0.000	No
12/05/03 11:48			Y	136.132	0.000	
			Z	233.940	0.000	
J452 - 0075	286.539	0.000	X	-74.519	0.000	No
12/05/03 11:49			Y	145.368	0.000	
			Z	235.414	0.000	
J452 - 0076	290.359	0.000	X	-75.321	0.000	No
12/05/03 11:50			Y	150.849	0.000	
			Z	236.389	0.000	
J452 - 0102	219.368	0.000	X	-57.148	0.000	No
12/05/03 12:10			Y	143.150	0.000	
			Z	156.091	0.000	
J452 - 0065	308.064	0.000	X	-80.127	0.000	No
12/05/03 11:40			Y	164.044	0.000	
			Z	248.138	0.000	
J452 - 0138	143.334	0.000	X	-36.905	0.000	No
12/05/03 12:40			Y	43.202	0.000	
			Z	131.591	0.000	
J452 - 0127	158.414	0.000	X	-42.034	0.000	No
12/05/03 12:31			Y	71.468	0.000	
			Z	134.983	0.000	
J452 - 0128	155.483	0.000	X	-42.144	0.000	No
12/05/03 12:32			Y	78.470	0.000	
			Z	127.441	0.000	
J452 - 0129	153.893	0.000	X	-41.028	0.000	No
12/05/03 12:32			Y	83.843	0.000	

			Z	122.352	0.000	
J452 - 0130	146.341	0.000	X	-39.077	0.000	
12/05/03 12:33			Y	74.826	0.000	
			Z	119.539	0.000	
J452 - 0131	149.768	0.000	X	-40.295	0.000	No
12/05/03 12:34			Y	67.689	0.000	
			Z	127.377	0.000	
J452 - 0132	153.019	0.000	X	-40.398	0.000	No
12/05/03 12:35			Y	61.591	0.000	
			Z	134.124	0.000	
J452 - 0133	148.025	0.000	X	-38.679	0.000	No
12/05/03 12:35			Y	52.499	0.000	
			Z	132.888	0.000	
J452 - 0134	143.893	0.000	X	-38.463	0.000	No
12/05/03 12:37			Y	58.803	0.000	
			Z	125.570	0.000	
J452 - 0135	140.279	0.000	X	-37.431	0.000	No
12/05/03 12:37			Y	65.047	0.000	
			Z	118.516	0.000	
J452 - 0100	241.865	0.000	X	-62.725	0.000	No
12/05/03 12:09			Y	152.840	0.000	
			Z	176.647	0.000	
J452 - 0137	137.865	0.000	X	-36.472	0.000	No
12/05/03 12:39			Y	49.807	0.000	
			Z	123.271	0.000	
J452 - 0124	161.684	0.000	X	-43.844	0.000	No
12/05/03 12:28			Y	91.250	0.000	
			Z	126.066	0.000	
J452 - 0139	140.042	0.000	X	-35.121	0.000	
12/05/03 12:40			Y	33.046	0.000	
			Z	131.477	0.000	
J452 - 0140	133.732	0.000	X	-34.690	0.000	No
12/05/03 12:42			Y	38.861	0.000	
			Z	123.170	0.000	
J452 - 0141	128.676	0.000	X	-34.002	0.000	No
12/05/03 12:42			Y	44.238	0.000	
			Z	115.950	0.000	
J452 - 0142	123.279	0.000	X	-32.557	0.000	No
12/05/03 12:43			Y	49.255	0.000	
			Z	108.221	0.000	
J452 - 0143	115.111	0.030	X	-30.114	0.015	No
12/05/03 12:44			Y	41.122	-0.017	
			Z	103.212	-0.019	
J452 - 0143	115.111	0.005	X	-30.114	-0.002	No
12/05/03 12:44			Y	41.122	0.003	
			Z	103.212	0.003	
J452 - 0144	120.878	0.000	X	-31.096	0.000	No
12/05/03 12:44			Y	35.144	0.000	
			Z	111.397	0.000	
J452 - 0145	127.393	0.000	X	-32.442	0.000	No
12/05/03 12:45			Y	29.780	0.000	
			Z	119.539	0.000	
J452 - 0146	134.192	0.000	X	-33.351	0.000	No
12/05/03 12:46			Y	24.248	0.000	

			Z	127.700	0.000	
J452 - 0136	133.101	0.000	X	-35.208	0.000	No
12/05/03 12:38			Y	55.936	0.000	
			Z	115.531	0.000	
J452 - 0114	189.505	0.000	X	-50.838	0.000	No
12/05/03 12:20			Y	115.214	0.000	
			Z	141.610	0.000	
J452 - 0103	229.027	0.000	X	-60.134	0.000	No
12/05/03 12:11			Y	139.072	0.000	
			Z	171.744	0.000	
J452 - 0104	220.506	0.000	X	-58.568	0.000	No
12/05/03 12:12			Y	129.703	0.000	
			Z	168.433	0.000	
J452 - 0105	211.845	0.000	X	-55.867	0.000	No
12/05/03 12:13			Y	120.247	0.000	
			Z	165.220	0.000	
J452 - 0106	202.214	0.000	X	-53.527	0.000	No
12/05/03 12:13			Y	116.944	0.000	
			Z	156.043	0.000	
J452 - 0107	209.547	0.000	X	-55.763	0.000	No
12/05/03 12:15			Y	126.247	0.000	
			Z	157.677	0.000	
J452 - 0108	216.143	0.000	X	-57.150	0.000	No
12/05/03 12:15			Y	135.024	0.000	
			Z	158.808	0.000	
J452 - 0109	218.410	0.000	X	-57.087	0.000	No
12/05/03 12:16			Y	138.041	0.000	
			Z	159.337	0.000	
J452 - 0110	206.696	0.000	X	-54.531	0.000	No
12/05/03 12:17			Y	132.188	0.000	
			Z	149.250	0.000	
J452 - 0111	199.156	0.000	X	-53.113	0.000	No
12/05/03 12:18			Y	122.570	0.000	
			Z	147.712	0.000	
J452 - 0126	163.284	0.000	X	-43.450	0.000	No
12/05/03 12:30			Y	81.101	0.000	
			Z	134.894	0.000	
J452 - 0113	183.680	0.000	X	-48.895	0.000	No
12/05/03 12:20			Y	105.385	0.000	
			Z	142.274	0.000	
J452 - 0125	162.713	0.000	X	-43.748	0.000	No
12/05/03 12:29			Y	84.497	0.000	
			Z	131.992	0.000	
J452 - 0115	194.917	0.000	X	-51.346	0.000	No
12/05/03 12:21			Y	124.787	0.000	
			Z	140.657	0.000	
J452 - 0116	184.325	0.000	X	-48.535	0.000	No
12/05/03 12:22			Y	119.100	0.000	
			Z	132.043	0.000	
J452 - 0117	179.852	0.000	X	-48.305	0.000	No
12/05/03 12:23			Y	109.386	0.000	
			Z	134.344	0.000	
J452 - 0118	175.682	0.000	X	-47.130	0.000	No
12/05/03 12:24			Y	99.955	0.000	

			Z	136.572	0.000	
J452 - 0119	174.698	0.000	X	-46.472	0.000	No
12/05/03 12:24			Y	96.414	0.000	
			Z	138.073	0.000	
J452 - 0120	166.245	0.000	X	-44.376	0.000	No
12/05/03 12:25			Y	90.298	0.000	
			Z	132.341	0.000	
J452 - 0121	168.394	0.000	X	-45.462	0.000	No
12/05/03 12:26			Y	98.635	0.000	
			Z	128.689	0.000	
J452 - 0122	171.006	0.000	X	-45.289	0.000	No
12/05/03 12:27			Y	108.192	0.000	
			Z	124.444	0.000	
J452 - 0123	161.125	0.000	X	-42.741	0.000	No
12/05/03 12:28			Y	99.191	0.000	
			Z	119.564	0.000	
J452 - 0147	136.661	0.000	X	-32.956	0.000	No
12/05/03 12:46			Y	22.821	0.000	
			Z	130.650	0.000	
J452 - 0112	192.810	0.000	X	-51.306	0.000	No
12/05/03 12:19			Y	113.370	0.000	
			Z	147.277	0.000	

Land Survey Overview

GNSS Solutions, Copyright © 2005 by Thales Navigation, 5/17/2012 6:20:24 AM
www.thalesnavigation.com

Project Name: DATA FOR EASTERN PART OF DUTSE 1 Project509
Spatial Reference System: UTM/WGS 84/UTM zone 32N
Time Zone: (GMT+01:00) West Central Africa
Linear Units: Meters

Coordinate System Summary

Coordinate system

Name:	UTM/WGS 84/UTM zone 32N
Type:	Projected
Unit name:	Meters
Meters per unit:	1
Vertical datum:	Ellipsoid
Vertical unit:	Meters
Meters per unit:	1

Datum

Name:	WGS 84
Ellipsoid Name:	WGS 84
Semi-major Axis:	6378137.000 m
Inverse Flattening:	298.257223563
DX to WGS84:	0.0000 m
DY to WGS84:	0.0000 m
DZ to WGS84:	0.0000 m
RX to WGS84:	0.000000 "
RY to WGS84:	0.000000 "
RZ to WGS84:	0.000000 "
ppm to WGS84 :	0.000000000000

Projection

Projection Class :	Transverse_Mercator
latitude_of_origin	0° 00' 00.00000"N
central_meridian	9° 00' 00.00000"E
scale_factor	0.999600000000
false_easting	500000.000 m
false_northing	0.000 m

Control Points	:	1
Reference Points	:	0
Logged Points	:	104
Target Points	:	0
Intermediate Points	:	0

Control Points

<u>Error</u>	Name	Components	95% Error	Status	Control
	J274	East	540864.444	0.000	FIXED
		North	1296278.714	0.000	FIXED
		Ellips height	470.679	0.000	FIXED

Logged Points

Name	Components	95% Error	Status
0001	East	541006.212	Adjusted
	North	1296828.780	Adjusted
	Ellips height	474.746	Adjusted
0002	East	541015.835	Adjusted
	North	1296825.320	Adjusted
	Ellips height	471.986	Adjusted
0003	East	541025.297	Adjusted
	North	1296823.626	Adjusted
	Ellips height	471.097	Adjusted
0004	East	541034.974	Adjusted
	North	1296821.528	Adjusted
	Ellips height	470.327	Adjusted
0005	East	541044.547	Adjusted
	North	1296819.718	Adjusted
	Ellips height	469.673	Adjusted
0006	East	541053.843	Adjusted
	North	1296817.938	Adjusted
	Ellips height	469.220	Adjusted
0007	East	541063.444	Adjusted
	North	1296817.119	Adjusted
	Ellips height	469.350	Adjusted
0008	East	541072.747	Adjusted
	North	1296814.555	Adjusted
	Ellips height	469.716	Adjusted
0009	East	541080.983	Adjusted
	North	1296813.425	Adjusted
	Ellips height	471.653	Adjusted
0010	East	541081.366	Adjusted
	North	1296804.508	Adjusted
	Ellips height	472.357	Adjusted
0011	East	541071.328	Adjusted
	North	1296805.266	Adjusted
	Ellips height	469.621	Adjusted
0012	East	541061.154	Adjusted
	North	1296806.941	Adjusted
	Ellips height	468.933	Adjusted
0013	East	541051.756	Adjusted
	North	1296808.249	Adjusted
	Ellips height	469.540	Adjusted
0014	East	541042.225	Adjusted
	North	1296810.361	Adjusted
	Ellips height	469.993	Adjusted

0015	East	541033.127	0.017	Adjusted
	North	1296812.179	0.014	Adjusted
	Ellips height	470.254	0.028	Adjusted
0016	East	541024.406	0.190	Adjusted
	North	1296814.236	0.184	Adjusted
	Ellips height	470.974	0.302	Adjusted
0017	East	541015.086	0.023	Adjusted
	North	1296816.230	0.017	Adjusted
	Ellips height	471.879	0.033	Adjusted
0018	East	541004.073	0.014	Adjusted
	North	1296819.257	0.012	Adjusted
	Ellips height	474.239	0.022	Adjusted
0019	East	541000.799	0.018	Adjusted
	North	1296809.465	0.015	Adjusted
	Ellips height	473.916	0.029	Adjusted
0020	East	541010.280	0.019	Adjusted
	North	1296807.255	0.016	Adjusted
	Ellips height	472.423	0.029	Adjusted
0021	East	541019.724	0.015	Adjusted
	North	1296805.295	0.013	Adjusted
	Ellips height	471.446	0.024	Adjusted
0022	East	541029.020	0.015	Adjusted
	North	1296803.671	0.012	Adjusted
	Ellips height	470.699	0.024	Adjusted
0023	East	541038.401	0.015	Adjusted
	North	1296802.220	0.012	Adjusted
	Ellips height	470.293	0.024	Adjusted
0024	East	541049.350	0.015	Adjusted
	North	1296801.218	0.013	Adjusted
	Ellips height	469.643	0.024	Adjusted
0025	East	541058.895	0.014	Adjusted
	North	1296799.663	0.011	Adjusted
	Ellips height	469.141	0.022	Adjusted
0026	East	541069.074	0.014	Adjusted
	North	1296798.060	0.012	Adjusted
	Ellips height	469.048	0.023	Adjusted
0027	East	541079.366	0.018	Adjusted
	North	1296795.472	0.014	Adjusted
	Ellips height	472.262	0.028	Adjusted
0028	East	541080.480	0.021	Adjusted
	North	1296785.913	0.015	Adjusted
	Ellips height	472.098	0.031	Adjusted
0029	East	541070.790	0.014	Adjusted
	North	1296786.995	0.012	Adjusted
	Ellips height	468.994	0.023	Adjusted
0030	East	541061.078	0.014	Adjusted
	North	1296788.868	0.012	Adjusted
	Ellips height	469.007	0.023	Adjusted
0031	East	541050.863	0.016	Adjusted
	North	1296790.480	0.014	Adjusted
	Ellips height	469.491	0.027	Adjusted
0032	East	541040.906	0.016	Adjusted
	North	1296791.813	0.013	Adjusted
	Ellips height	469.692	0.026	Adjusted

0033	East	541031.743	0.016	Adjusted
	North	1296793.461	0.013	Adjusted
	Ellips height	469.855	0.026	Adjusted
0034	East	541021.806	0.014	Adjusted
	North	1296795.376	0.012	Adjusted
	Ellips height	471.033	0.024	Adjusted
0035	East	541012.224	0.015	Adjusted
	North	1296797.269	0.013	Adjusted
	Ellips height	472.236	0.026	Adjusted
0036	East	541003.049	0.032	Adjusted
	North	1296798.816	0.025	Adjusted
	Ellips height	473.399	0.055	Adjusted
0037	East	541001.839	0.018	Adjusted
	North	1296788.282	0.014	Adjusted
	Ellips height	472.734	0.029	Adjusted
0038	East	541011.808	0.015	Adjusted
	North	1296787.171	0.012	Adjusted
	Ellips height	471.601	0.026	Adjusted
0039	East	541021.916	0.014	Adjusted
	North	1296785.628	0.011	Adjusted
	Ellips height	470.197	0.024	Adjusted
0040	East	541032.307	0.021	Adjusted
	North	1296783.725	0.017	Adjusted
	Ellips height	469.344	0.037	Adjusted
0041	East	541042.281	0.018	Adjusted
	North	1296782.335	0.015	Adjusted
	Ellips height	469.230	0.033	Adjusted
0042	East	541052.606	0.015	Adjusted
	North	1296780.434	0.012	Adjusted
	Ellips height	469.293	0.026	Adjusted
0043	East	541063.178	0.017	Adjusted
	North	1296778.891	0.013	Adjusted
	Ellips height	468.829	0.030	Adjusted
0044	East	541073.558	0.016	Adjusted
	North	1296776.856	0.012	Adjusted
	Ellips height	468.947	0.028	Adjusted
0045	East	541084.214	0.016	Adjusted
	North	1296776.708	0.012	Adjusted
	Ellips height	471.973	0.029	Adjusted
0046	East	541085.489	0.015	Adjusted
	North	1296766.726	0.012	Adjusted
	Ellips height	471.744	0.027	Adjusted
0047	East	541074.628	0.015	Adjusted
	North	1296767.372	0.012	Adjusted
	Ellips height	468.881	0.028	Adjusted
0048	East	541065.336	0.022	Adjusted
	North	1296768.930	0.017	Adjusted
	Ellips height	468.824	0.041	Adjusted
0049	East	541056.131	0.016	Adjusted
	North	1296770.517	0.013	Adjusted
	Ellips height	468.929	0.030	Adjusted
0050	East	541046.812	0.015	Adjusted
	North	1296771.967	0.012	Adjusted
	Ellips height	469.181	0.029	Adjusted

0051	East	541036.918	0.015	Adjusted
	North	1296773.287	0.012	Adjusted
	Ellips height	469.205	0.028	Adjusted
0052	East	541026.587	0.015	Adjusted
	North	1296774.433	0.012	Adjusted
	Ellips height	469.223	0.028	Adjusted
0053	East	541016.271	0.019	Adjusted
	North	1296775.880	0.015	Adjusted
	Ellips height	469.585	0.036	Adjusted
0054	East	541006.862	0.014	Adjusted
	North	1296778.121	0.011	Adjusted
	Ellips height	470.459	0.025	Adjusted
0055	East	540996.927	0.015	Adjusted
	North	1296779.390	0.012	Adjusted
	Ellips height	472.152	0.028	Adjusted
0056	East	540999.815	0.015	Adjusted
	North	1296768.679	0.011	Adjusted
	Ellips height	470.076	0.027	Adjusted
0057	East	541010.328	0.014	Adjusted
	North	1296766.941	0.012	Adjusted
	Ellips height	469.025	0.028	Adjusted
0058	East	541020.096	0.014	Adjusted
	North	1296765.616	0.012	Adjusted
	Ellips height	469.119	0.027	Adjusted
0059	East	541030.150	0.014	Adjusted
	North	1296764.344	0.012	Adjusted
	Ellips height	469.058	0.028	Adjusted
0060	East	541039.883	0.016	Adjusted
	North	1296762.788	0.013	Adjusted
	Ellips height	469.058	0.031	Adjusted
0061	East	541050.147	0.015	Adjusted
	North	1296761.570	0.013	Adjusted
	Ellips height	469.118	0.030	Adjusted
0062	East	541059.749	0.018	Adjusted
	North	1296760.416	0.016	Adjusted
	Ellips height	468.764	0.038	Adjusted
0063	East	541068.664	0.015	Adjusted
	North	1296759.034	0.012	Adjusted
	Ellips height	468.883	0.031	Adjusted
0064	East	541077.883	0.015	Adjusted
	North	1296757.675	0.012	Adjusted
	Ellips height	468.830	0.030	Adjusted
0065	East	541087.107	0.023	Adjusted
	North	1296756.989	0.019	Adjusted
	Ellips height	471.643	0.047	Adjusted
0066	East	541087.101	0.013	Adjusted
	North	1296746.751	0.012	Adjusted
	Ellips height	471.436	0.026	Adjusted
0067	East	541077.215	0.015	Adjusted
	North	1296747.822	0.013	Adjusted
	Ellips height	468.846	0.031	Adjusted
0068	East	541067.700	0.013	Adjusted
	North	1296748.787	0.011	Adjusted
	Ellips height	468.657	0.024	Adjusted

0069	East	541056.382	0.013	Adjusted
	North	1296748.499	0.011	Adjusted
	Ellips height	468.492	0.026	Adjusted
0070	East	541047.076	0.013	Adjusted
	North	1296749.786	0.012	Adjusted
	Ellips height	468.977	0.027	Adjusted
0071	East	541037.938	0.016	Adjusted
	North	1296751.260	0.014	Adjusted
	Ellips height	468.987	0.032	Adjusted
0072	East	541028.511	0.014	Adjusted
	North	1296752.755	0.012	Adjusted
	Ellips height	468.905	0.028	Adjusted
0073	East	541018.963	0.013	Adjusted
	North	1296754.467	0.011	Adjusted
	Ellips height	468.928	0.025	Adjusted
0074	East	541009.147	0.013	Adjusted
	North	1296755.468	0.011	Adjusted
	Ellips height	468.912	0.026	Adjusted
0075	East	540999.743	0.013	Adjusted
	North	1296757.365	0.011	Adjusted
	Ellips height	469.039	0.026	Adjusted
0076	East	540988.952	0.015	Adjusted
	North	1296758.117	0.013	Adjusted
	Ellips height	470.240	0.031	Adjusted
0077	East	540980.566	0.014	Adjusted
	North	1296760.823	0.011	Adjusted
	Ellips height	472.531	0.026	Adjusted
0078	East	540976.995	0.013	Adjusted
	North	1296750.220	0.010	Adjusted
	Ellips height	471.684	0.027	Adjusted
0079	East	540986.481	0.014	Adjusted
	North	1296749.124	0.011	Adjusted
	Ellips height	470.022	0.029	Adjusted
0080	East	540996.280	0.013	Adjusted
	North	1296748.055	0.011	Adjusted
	Ellips height	469.735	0.026	Adjusted
0081	East	541006.867	0.016	Adjusted
	North	1296746.708	0.013	Adjusted
	Ellips height	468.863	0.033	Adjusted
0082	East	541017.590	0.014	Adjusted
	North	1296745.088	0.011	Adjusted
	Ellips height	468.950	0.028	Adjusted
0083	East	541028.003	0.013	Adjusted
	North	1296743.821	0.010	Adjusted
	Ellips height	468.904	0.027	Adjusted
0084	East	541038.105	0.013	Adjusted
	North	1296742.469	0.011	Adjusted
	Ellips height	468.934	0.028	Adjusted
0085	East	541047.546	0.014	Adjusted
	North	1296741.081	0.011	Adjusted
	Ellips height	468.701	0.030	Adjusted
0086	East	541056.940	0.013	Adjusted
	North	1296740.158	0.011	Adjusted
	Ellips height	468.517	0.027	Adjusted

0087	East	541067.370	0.010	Adjusted
	North	1296739.189	0.009	Adjusted
	Ellips height	468.600	0.020	Adjusted
0088	East	541077.681	0.017	Adjusted
	North	1296737.485	0.013	Adjusted
	Ellips height	469.671	0.036	Adjusted
0089	East	541086.599	0.017	Adjusted
	North	1296736.137	0.014	Adjusted
	Ellips height	471.189	0.036	Adjusted
0090	East	541090.921	0.013	Adjusted
	North	1296727.556	0.010	Adjusted
	Ellips height	471.125	0.027	Adjusted
0091	East	541080.240	0.015	Adjusted
	North	1296738.198	0.011	Adjusted
	Ellips height	468.942	0.031	Adjusted
0092	East	541070.561	0.015	Adjusted
	North	1296729.567	0.012	Adjusted
	Ellips height	469.068	0.030	Adjusted
0093	East	541060.448	0.017	Adjusted
	North	1296730.752	0.013	Adjusted
	Ellips height	468.541	0.036	Adjusted
0094	East	541051.458	0.014	Adjusted
	North	1296731.502	0.011	Adjusted
	Ellips height	468.378	0.029	Adjusted
0095	East	541042.880	0.015	Adjusted
	North	1296732.386	0.012	Adjusted
	Ellips height	468.695	0.033	Adjusted
0096	East	541034.013	0.015	Adjusted
	North	1296733.585	0.012	Adjusted
	Ellips height	468.694	0.032	Adjusted
0097	East	541024.407	0.019	Adjusted
	North	1296734.744	0.015	Adjusted
	Ellips height	468.374	0.039	Adjusted
0098	East	541015.215	0.013	Adjusted
	North	1296736.141	0.010	Adjusted
	Ellips height	468.904	0.026	Adjusted
0099	East	541005.103	0.017	Adjusted
	North	1296736.926	0.014	Adjusted
	Ellips height	469.057	0.036	Adjusted
0100	East	540995.172	0.019	Adjusted
	North	1296737.790	0.015	Adjusted
	Ellips height	469.354	0.039	Adjusted
0101	East	540985.860	0.020	Adjusted
	North	1296738.821	0.015	Adjusted
	Ellips height	469.680	0.038	Adjusted
0102	East	540976.631	0.016	Adjusted
	North	1296740.508	0.009	Adjusted
	Ellips height	470.368	0.033	Adjusted
0103	East	540966.676	0.025	Adjusted
	North	1296741.175	0.020	Adjusted
	Ellips height	474.440	0.050	Adjusted
BROBAA12	East	540926.400	98.000	Estimated
	North	1296948.873	98.000	Estimated
	Ellips height	486.404	98.000	Estimated

Files

Name	Start Time	Sampling	Epochs	Size (Kb)	Type
BMASTA12.130	12/05/09 08:48	5	2220	1151	L1 GPS
BROBAA12.130	12/05/09 09:19	5	1692	877	L1 GPS

Observations

Name	Site	Antenna Type	Antenna Height	Height Type	Receiver Type	Start Time	File
BMASTA12.130	J274	110454	1.452	Slant	PROMARK3	12/05/09 08:48:55	
BROBAA12.130	BROBAA12	110454	2.000	Vertical	PROMARK3	12/05/09 09:19:15	

Stops

Point	Start Time	Time span	File
0001	May 9 2012 09:19:15.00	00:00:55.00	BROBAA12.130
0002	May 9 2012 09:21:50.00	00:00:55.00	BROBAA12.130
0003	May 9 2012 09:23:05.00	00:00:55.00	BROBAA12.130
0004	May 9 2012 09:24:20.00	00:00:50.00	BROBAA12.130
0005	May 9 2012 09:25:30.00	00:00:50.00	BROBAA12.130
0006	May 9 2012 09:26:40.00	00:00:50.00	BROBAA12.130
0007	May 9 2012 09:27:50.00	00:00:50.00	BROBAA12.130
0008	May 9 2012 09:29:00.00	00:00:50.00	BROBAA12.130
0009	May 9 2012 09:30:15.00	00:00:55.00	BROBAA12.130
0010	May 9 2012 09:31:40.00	00:00:50.00	BROBAA12.130
0011	May 9 2012 09:33:20.00	00:01:00.00	BROBAA12.130
0012	May 9 2012 09:34:35.00	00:00:55.00	BROBAA12.130
0013	May 9 2012 09:35:50.00	00:00:50.00	BROBAA12.130
0014	May 9 2012 09:37:00.00	00:00:50.00	BROBAA12.130
0015	May 9 2012 09:38:10.00	00:00:55.00	BROBAA12.130
0016	May 9 2012 09:39:25.00	00:00:50.00	BROBAA12.130
0017	May 9 2012 09:40:35.00	00:00:50.00	BROBAA12.130
0018	May 9 2012 09:41:55.00	00:01:00.00	BROBAA12.130
0019	May 9 2012 09:43:20.00	00:01:00.00	BROBAA12.130
0020	May 9 2012 09:46:55.00	00:00:50.00	BROBAA12.130
0021	May 9 2012 09:48:05.00	00:00:50.00	BROBAA12.130
0022	May 9 2012 09:49:15.00	00:00:55.00	BROBAA12.130
0023	May 9 2012 09:50:30.00	00:00:50.00	BROBAA12.130
0024	May 9 2012 09:51:45.00	00:00:50.00	BROBAA12.130
0025	May 9 2012 09:52:50.00	00:00:55.00	BROBAA12.130
0026	May 9 2012 09:54:05.00	00:00:50.00	BROBAA12.130
0027	May 9 2012 09:55:55.00	00:00:55.00	BROBAA12.130
0028	May 9 2012 09:57:10.00	00:00:50.00	BROBAA12.130
0029	May 9 2012 09:58:55.00	00:00:55.00	BROBAA12.130
0030	May 9 2012 10:00:10.00	00:00:50.00	BROBAA12.130
0031	May 9 2012 10:01:20.00	00:00:55.00	BROBAA12.130
0032	May 9 2012 10:02:35.00	00:00:50.00	BROBAA12.130
0033	May 9 2012 10:03:45.00	00:00:50.00	BROBAA12.130
0034	May 9 2012 10:04:55.00	00:00:55.00	BROBAA12.130
0035	May 9 2012 10:06:05.00	00:00:55.00	BROBAA12.130
0036	May 9 2012 10:07:20.00	00:00:50.00	BROBAA12.130
0037	May 9 2012 10:08:50.00	00:01:00.00	BROBAA12.130
0038	May 9 2012 10:10:55.00	00:00:50.00	BROBAA12.130
0039	May 9 2012 10:12:15.00	00:00:55.00	BROBAA12.130
0040	May 9 2012 10:13:30.00	00:00:50.00	BROBAA12.130
0041	May 9 2012 10:14:40.00	00:00:50.00	BROBAA12.130
0042	May 9 2012 10:15:50.00	00:00:55.00	BROBAA12.130
0043	May 9 2012 10:17:05.00	00:00:50.00	BROBAA12.130
0044	May 9 2012 10:18:25.00	00:00:50.00	BROBAA12.130
0045	May 9 2012 10:20:20.00	00:00:55.00	BROBAA12.130
0046	May 9 2012 10:21:35.00	00:00:55.00	BROBAA12.130
0047	May 9 2012 10:24:00.00	00:00:55.00	BROBAA12.130
0048	May 9 2012 10:25:15.00	00:00:50.00	BROBAA12.130
0049	May 9 2012 10:26:35.00	00:00:50.00	BROBAA12.130

0050	May 9 2012 10:27:45.00	00:00:50.00	BROBAA12.130
0051	May 9 2012 10:28:55.00	00:00:55.00	BROBAA12.130
0052	May 9 2012 10:30:10.00	00:00:55.00	BROBAA12.130
0053	May 9 2012 10:31:25.00	00:00:50.00	BROBAA12.130
0054	May 9 2012 10:32:35.00	00:00:55.00	BROBAA12.130
0055	May 9 2012 10:33:50.00	00:00:55.00	BROBAA12.130
0056	May 9 2012 10:35:20.00	00:01:00.00	BROBAA12.130
0057	May 9 2012 10:37:30.00	00:00:50.00	BROBAA12.130
0058	May 9 2012 10:38:40.00	00:00:55.00	BROBAA12.130
0059	May 9 2012 10:39:50.00	00:00:50.00	BROBAA12.130
0060	May 9 2012 10:41:05.00	00:00:50.00	BROBAA12.130
0061	May 9 2012 10:42:15.00	00:00:50.00	BROBAA12.130
0062	May 9 2012 10:43:25.00	00:00:50.00	BROBAA12.130
0063	May 9 2012 10:44:30.00	00:00:55.00	BROBAA12.130
0064	May 9 2012 10:45:40.00	00:00:55.00	BROBAA12.130
0065	May 9 2012 10:47:40.00	00:00:55.00	BROBAA12.130
0066	May 9 2012 10:48:55.00	00:00:55.00	BROBAA12.130
0067	May 9 2012 10:50:55.00	00:00:55.00	BROBAA12.130
0068	May 9 2012 10:52:05.00	00:00:55.00	BROBAA12.130
0069	May 9 2012 10:53:30.00	00:00:55.00	BROBAA12.130
0070	May 9 2012 10:54:45.00	00:00:50.00	BROBAA12.130
0071	May 9 2012 10:55:55.00	00:00:55.00	BROBAA12.130
0072	May 9 2012 10:57:10.00	00:00:50.00	BROBAA12.130
0073	May 9 2012 10:58:15.00	00:00:55.00	BROBAA12.130
0074	May 9 2012 10:59:30.00	00:00:55.00	BROBAA12.130
0075	May 9 2012 11:00:40.00	00:00:55.00	BROBAA12.130
0076	May 9 2012 11:02:05.00	00:00:55.00	BROBAA12.130
0077	May 9 2012 11:03:20.00	00:00:55.00	BROBAA12.130
0078	May 9 2012 11:05:55.00	00:00:55.00	BROBAA12.130
0079	May 9 2012 11:07:20.00	00:00:55.00	BROBAA12.130
0080	May 9 2012 11:08:35.00	00:00:55.00	BROBAA12.130
0081	May 9 2012 11:10:05.00	00:01:00.00	BROBAA12.130
0082	May 9 2012 11:12:10.00	00:00:50.00	BROBAA12.130
0083	May 9 2012 11:13:20.00	00:00:55.00	BROBAA12.130
0084	May 9 2012 11:14:40.00	00:00:55.00	BROBAA12.130
0085	May 9 2012 11:15:50.00	00:00:50.00	BROBAA12.130
0086	May 9 2012 11:17:00.00	00:00:55.00	BROBAA12.130
0087	May 9 2012 11:18:05.00	00:00:05.00	BROBAA12.130
0087	May 9 2012 11:18:15.00	00:00:50.00	BROBAA12.130
0088	May 9 2012 11:19:25.00	00:00:55.00	BROBAA12.130
0089	May 9 2012 11:20:40.00	00:00:55.00	BROBAA12.130
0090	May 9 2012 11:21:55.00	00:01:00.00	BROBAA12.130
0091	May 9 2012 11:23:40.00	00:00:50.00	BROBAA12.130
0092	May 9 2012 11:24:50.00	00:00:50.00	BROBAA12.130
0093	May 9 2012 11:26:00.00	00:00:55.00	BROBAA12.130
0094	May 9 2012 11:27:15.00	00:00:55.00	BROBAA12.130
0095	May 9 2012 11:28:30.00	00:00:50.00	BROBAA12.130
0096	May 9 2012 11:29:40.00	00:00:50.00	BROBAA12.130
0097	May 9 2012 11:30:50.00	00:00:50.00	BROBAA12.130
0098	May 9 2012 11:32:00.00	00:01:00.00	BROBAA12.130
0099	May 9 2012 11:33:30.00	00:00:50.00	BROBAA12.130
0100	May 9 2012 11:34:40.00	00:00:50.00	BROBAA12.130
0101	May 9 2012 11:35:55.00	00:00:50.00	BROBAA12.130
0102	May 9 2012 11:37:05.00	00:00:55.00	BROBAA12.130
0103	May 9 2012 11:39:05.00	00:01:00.00	BROBAA12.130

Processes

Reference	Reference File	Rover	Rover File	Mode	Num
J274	BMASTA12.130	BROBAA12	BROBAA12.130	Stop & Go	1

Processed vectors

Vector Identifier	Vector Length	95% Error		Vector Components	95% Error	SV	PDOP	QA
<u>Solution</u>								
J274 - 0040	532.421	0.028	X	-130.042	0.015	9	1.9	
Fixed								
12/05/09 10:13			Y	149.424	0.010			
			Z	494.201	0.008			
J274 - 0052	521.801	0.021	X	-127.360	0.012	9	1.9	
Fixed								
12/05/09 10:30			Y	144.054	0.007			
			Z	485.082	0.005			
J274 - 0029	548.821	0.018	X	-137.299	0.009	9	1.8	
Fixed								
12/05/09 09:58			Y	187.251	0.006			
			Z	497.283	0.006			
J274 - 0030	546.988	0.018	X	-136.082	0.010	9	1.8	
Fixed								
12/05/09 10:00			Y	177.607	0.007			
			Z	499.132	0.005			
J274 - 0031	544.910	0.021	X	-134.276	0.011	9	1.8	
Fixed								
12/05/09 10:01			Y	167.550	0.007			
			Z	500.824	0.007			
J274 - 0032	542.842	0.020	X	-132.730	0.011	9	1.8	
Fixed								
12/05/09 10:02			Y	157.710	0.008			
			Z	502.183	0.006			
J274 - 0033	541.498	0.021	X	-131.412	0.011	9	1.8	
Fixed								
12/05/09 10:03			Y	148.639	0.008			
			Z	503.843	0.006			
J274 - 0034	540.340	0.019	X	-129.042	0.010	9	1.8	
Fixed								
12/05/09 10:04			Y	138.956	0.007			
			Z	505.971	0.006			
J274 - 0035	539.448	0.021	X	-126.701	0.011	9	1.8	
Fixed								
12/05/09 10:06			Y	129.630	0.007			
			Z	508.082	0.006			
J274 - 0036	538.506	0.043	X	-124.395	0.023	9	1.8	No
Fixed								
12/05/09 10:07			Y	120.709	0.015			
			Z	509.847	0.012			
J274 - 0037	528.009	0.023	X	-122.724	0.012	9	1.8	
Fixed								
12/05/09 10:08			Y	119.743	0.008			
			Z	499.394	0.007			
J274 - 0027	559.926	0.022	X	-137.240	0.012	9	1.7	
Fixed								
12/05/09 09:55			Y	195.969	0.008			
			Z	506.240	0.007			

J274 - 0039	531.051	0.019	X	-127.909	0.010	9	1.8
Fixed							
12/05/09 10:12			Y	139.242	0.007		
			Z	496.252	0.005		
J274 - 0026	558.461	0.018	X	-139.190	0.009	10	1.6
Fixed							
12/05/09 09:54			Y	185.214	0.007		
			Z	508.135	0.006		
J274 - 0041	534.342	0.025	X	-131.495	0.013	9	1.9
Fixed							
12/05/09 10:14			Y	159.296	0.009		
			Z	492.803	0.007		
J274 - 0042	536.088	0.020	X	-132.733	0.011	9	1.9
Fixed							
12/05/09 10:15			Y	169.558	0.007		
			Z	490.941	0.006		
J274 - 0043	538.459	0.023	X	-134.592	0.012	9	1.9
Fixed							
12/05/09 10:17			Y	179.969	0.009		
			Z	489.321	0.005		
J274 - 0044	540.501	0.022	X	-135.757	0.012	9	1.9
Fixed							
12/05/09 10:18			Y	190.299	0.008		
			Z	487.338	0.006		
J274 - 0045	544.580	0.022	X	-134.539	0.012	9	1.9
Fixed							
12/05/09 10:20			Y	201.306	0.008		
			Z	487.794	0.006		
J274 - 0046	535.984	0.021	X	-132.963	0.011	9	1.9
Fixed							
12/05/09 10:21			Y	202.845	0.007		
			Z	477.968	0.005		
J274 - 0047	532.188	0.021	X	-134.091	0.012	9	1.9
Fixed							
12/05/09 10:24			Y	191.646	0.008		
			Z	478.033	0.005		
J274 - 0048	530.026	0.031	X	-132.946	0.017	9	1.9
Fixed							
12/05/09 10:25			Y	182.415	0.011		
			Z	479.560	0.008		
J274 - 0049	528.081	0.023	X	-131.665	0.013	9	1.9
Fixed							
12/05/09 10:26			Y	173.295	0.008		
			Z	481.148	0.006		
J274 - 0050	526.127	0.021	X	-130.197	0.012	9	1.9
Fixed							
12/05/09 10:27			Y	164.090	0.008		
			Z	482.631	0.005		
J274 - 0001	568.314	0.017	X	-129.629	0.009	10	1.5
Fixed							
12/05/09 09:19			Y	123.093	0.006		
			Z	539.467	0.006		
J274 - 0038	529.623	0.020	X	-125.217	0.011	9	1.8
Fixed							
12/05/09 10:10			Y	129.439	0.007		
			Z	498.063	0.006		

J274 - 0014	560.838	0.019	X	-136.379	0.010 10 1.5
Fixed					
12/05/09 09:37			Y	158.470	0.007
			Z	520.411	0.006
J274 - 0002	567.443	0.014	X	-133.166	0.007 11 1.4
Fixed					
12/05/09 09:21			Y	132.262	0.005
			Z	535.505	0.005
J274 - 0003	568.415	0.020	X	-135.223	0.010 11 1.4
Fixed					
12/05/09 09:23			Y	141.514	0.007
			Z	533.651	0.007
J274 - 0004	569.229	0.014	X	-137.121	0.007 11 1.4
Fixed					
12/05/09 09:24			Y	151.010	0.005
			Z	531.428	0.004
J274 - 0005	570.455	0.018	X	-138.947	0.010 11 1.4
Fixed					
12/05/09 09:25			Y	160.413	0.007
			Z	529.509	0.006
J274 - 0006	571.780	0.021	X	-140.539	0.011 10 1.5
Fixed					
12/05/09 09:26			Y	169.574	0.007
			Z	527.661	0.007
J274 - 0007	574.266	0.019	X	-141.811	0.010 10 1.5
Fixed					
12/05/09 09:27			Y	179.099	0.007
			Z	526.872	0.006
J274 - 0008	575.166	0.026	X	-142.457	0.013 10 1.5
Fixed					
12/05/09 09:29			Y	188.422	0.009
			Z	524.423	0.008
J274 - 0009	577.155	0.019	X	-141.699	0.010 10 1.5
Fixed					
12/05/09 09:30			Y	196.896	0.007
			Z	523.700	0.006
J274 - 0010	569.044	0.024	X	-139.290	0.012 10 1.5
Fixed					
12/05/09 09:31			Y	197.670	0.008
			Z	515.108	0.008
J274 - 0011	565.994	0.019	X	-140.451	0.010 10 1.5
Fixed					
12/05/09 09:33			Y	187.301	0.006
			Z	515.307	0.006
J274 - 0028	551.543	0.025	X	-135.660	0.013 9 1.8
Fixed					
12/05/09 09:57			Y	197.346	0.009
			Z	496.841	0.007
J274 - 0013	561.944	0.021	X	-137.944	0.011 10 1.5
Fixed					
12/05/09 09:35			Y	167.874	0.007
			Z	518.238	0.007
J274 - 0053	520.069	0.027	X	-125.623	0.015 10 1.5
Fixed					
12/05/09 10:31			Y	133.882	0.010
			Z	486.586	0.007
J274 - 0015	559.753	0.022	X	-135.013	0.011 10 1.5
Fixed					

12/05/09 09:38			Y	149.473	0.008				
			Z	522.257	0.007				
J274 - 0016	559.155	0.249	X	-133.311	0.123	10	1.5	No	
Float									
12/05/09 09:39			Y	140.913	0.090				
			Z	524.430	0.086				
J274 - 0017	558.481	0.027	X	-131.320	0.014	10	1.5		
Fixed									
12/05/09 09:40			Y	131.795	0.010				
			Z	526.580	0.008				
J274 - 0018	558.551	0.018	X	-127.856	0.009	10	1.5		
Fixed									
12/05/09 09:41			Y	121.203	0.006				
			Z	530.039	0.006				
J274 - 0019	548.245	0.023	X	-125.669	0.012	10	1.5		
Fixed									
12/05/09 09:43			Y	118.232	0.008				
			Z	520.386	0.007				
J274 - 0020	548.543	0.024	X	-128.210	0.012	10	1.5		
Fixed									
12/05/09 09:46			Y	127.423	0.008				
			Z	517.905	0.007				
J274 - 0021	549.248	0.019	X	-130.297	0.010	10	1.5		
Fixed									
12/05/09 09:48			Y	136.651	0.007				
			Z	515.774	0.006				
J274 - 0022	550.400	0.019	X	-132.205	0.010	10	1.5		
Fixed									
12/05/09 09:49			Y	145.760	0.007				
			Z	514.019	0.006				
J274 - 0023	551.902	0.019	X	-133.832	0.010	10	1.6		
Fixed									
12/05/09 09:50			Y	155.002	0.007				
			Z	512.503	0.006				
J274 - 0024	554.509	0.019	X	-136.040	0.010	10	1.6		
Fixed									
12/05/09 09:51			Y	165.739	0.007				
			Z	511.375	0.006				
J274 - 0025	556.311	0.018	X	-137.766	0.009	10	1.6		
Fixed									
12/05/09 09:52			Y	175.130	0.007				
			Z	509.737	0.005				
J274 - 0012	563.924	0.017	X	-139.797	0.009	10	1.5		
Fixed									
12/05/09 09:34			Y	177.096	0.006				
			Z	516.821	0.006				
J274 - 0091	498.831	0.023	X	-127.075	0.013	9	1.8		
Fixed									
12/05/09 11:23			Y	198.442	0.006				
			Z	439.665	0.006				
J274 - 0051	524.024	0.021	X	-128.829	0.012	9	1.9		
Fixed									
12/05/09 10:28			Y	154.285	0.007				
			Z	483.942	0.005				
J274 - 0081	489.411	0.024	X	-118.929	0.014	9	1.8		
Fixed									
12/05/09 11:10			Y	125.412	0.007				
			Z	457.876	0.007				

J274 - 0082	491.101	0.020	X	-120.265	0.012	9	1.8	
Fixed								
12/05/09 11:12			Y	136.063	0.006			
			Z	456.293	0.006			
J274 - 0083	493.255	0.020	X	-121.749	0.011	9	1.8	
Fixed								
12/05/09 11:13			Y	146.375	0.005			
			Z	455.029	0.005			
J274 - 0084	495.432	0.020	X	-123.093	0.012	9	1.8	
Fixed								
12/05/09 11:14			Y	156.394	0.005			
			Z	453.698	0.006			
J274 - 0085	497.532	0.021	X	-124.575	0.013	9	1.8	
Fixed								
12/05/09 11:15			Y	165.721	0.006			
			Z	452.278	0.006			
J274 - 0086	500.216	0.019	X	-126.097	0.011	9	1.8	
Fixed								
12/05/09 11:17			Y	174.994	0.005			
			Z	451.324	0.006			
J274 - 0087	503.477	0.077	X	-127.540	0.046	9	1.8	No
Fixed								
12/05/09 11:18			Y	185.348	0.020			
			Z	450.410	0.020			
J274 - 0087	503.437	0.015	X	-127.519	0.009	9	1.8	
Fixed								
12/05/09 11:18			Y	185.333	0.004			
			Z	450.377	0.004			
J274 - 0088	506.136	0.026	X	-127.820	0.015	9	1.8	
Fixed								
12/05/09 11:19			Y	195.737	0.007			
			Z	448.913	0.007			
J274 - 0079	486.203	0.021	X	-114.978	0.012	9	1.8	
Fixed								
12/05/09 11:07			Y	105.397	0.006			
			Z	460.505	0.005			
J274 - 0090	502.971	0.020	X	-126.575	0.012	9	1.8	
Fixed								
12/05/09 11:21			Y	209.354	0.005			
			Z	439.465	0.006			
J274 - 0078	484.974	0.019	X	-112.049	0.011	9	1.8	
Fixed								
12/05/09 11:05			Y	96.263	0.006			
			Z	461.929	0.005			
J274 - 0092	495.962	0.022	X	-125.653	0.013	10	1.5	
Fixed								
12/05/09 11:24			Y	188.865	0.006			
			Z	441.044	0.006			
J274 - 0093	492.931	0.026	X	-124.754	0.015	10	1.5	
Fixed								
12/05/09 11:26			Y	178.760	0.007			
			Z	442.111	0.007			
J274 - 0094	490.117	0.021	X	-123.599	0.012	10	1.5	
Fixed								
12/05/09 11:27			Y	169.836	0.006			
			Z	442.824	0.006			

J274 - 0095	487.727	0.024	X	-122.075	0.014	10	1.5
Fixed							
12/05/09 11:28			Y	161.390	0.006		
			Z	443.766	0.006		
J274 - 0096	485.674	0.023	X	-120.874	0.014	10	1.5
Fixed							
12/05/09 11:29			Y	152.600	0.006		
			Z	444.952	0.006		
J274 - 0097	483.497	0.029	X	-119.853	0.017	10	1.5
Fixed							
12/05/09 11:30			Y	143.029	0.008		
			Z	446.034	0.008		
J274 - 0098	481.856	0.019	X	-118.125	0.011	10	1.5
Fixed							
12/05/09 11:32			Y	133.996	0.005		
			Z	447.523	0.005		
J274 - 0099	479.535	0.026	X	-116.490	0.015	10	1.5
Fixed							
12/05/09 11:33			Y	124.013	0.007		
			Z	448.336	0.007		
J274 - 0100	477.544	0.029	X	-114.761	0.017	11	1.3
Fixed							
12/05/09 11:34			Y	114.230	0.007		
			Z	449.255	0.008		
J274 - 0101	476.074	0.028	X	-113.138	0.017	11	1.3
Fixed							
12/05/09 11:35			Y	105.057	0.008		
			Z	450.344	0.008		
J274 - 0102	475.442	0.023	X	-111.311	0.015	11	1.3
Fixed							
12/05/09 11:37			Y	96.003	0.005		
			Z	452.148	0.005		
J274 - 0089	508.747	0.026	X	-127.534	0.015	9	1.8
Fixed							
12/05/09 11:20			Y	204.825	0.007		
			Z	447.889	0.007		
J274 - 0066	518.536	0.019	X	-129.509	0.011	9	1.7
Fixed							
12/05/09 10:48			Y	205.023	0.006		
			Z	458.337	0.006		
J274 - 0054	519.553	0.019	X	-123.698	0.010	10	1.5
Fixed							
12/05/09 10:32			Y	124.662	0.007		
			Z	488.972	0.005		
J274 - 0055	518.145	0.021	X	-120.701	0.012	9	1.6
Fixed							
12/05/09 10:33			Y	115.085	0.007		
			Z	490.572	0.006		
J274 - 0056	508.553	0.020	X	-121.024	0.011	9	1.6
Fixed							
12/05/09 10:35			Y	117.945	0.007		
			Z	479.654	0.005		
J274 - 0057	509.790	0.021	X	-123.402	0.012	9	1.6
Fixed							
12/05/09 10:37			Y	128.210	0.007		
			Z	477.724	0.006		
J274 - 0058	511.410	0.020	X	-124.634	0.011	9	1.7
Fixed							

12/05/09 10:38			Y	137.910	0.007			
			Z	476.432	0.006			
J274 - 0059	513.358	0.021	X	-126.073	0.012	9	1.7	
Fixed								
12/05/09 10:39			Y	147.865	0.007			
			Z	475.161	0.006			
J274 - 0060	515.121	0.023	X	-127.345	0.013	9	1.7	
Fixed								
12/05/09 10:41			Y	157.523	0.007			
			Z	473.623	0.006			
J274 - 0061	517.572	0.022	X	-128.712	0.013	9	1.7	
Fixed								
12/05/09 10:42			Y	167.703	0.007			
			Z	472.429	0.006			
J274 - 0062	520.029	0.028	X	-130.385	0.016	9	1.7	
Fixed								
12/05/09 10:43			Y	177.162	0.009			
			Z	471.215	0.007			
J274 - 0063	522.172	0.022	X	-131.442	0.013	9	1.7	
Fixed								
12/05/09 10:44			Y	186.024	0.007			
			Z	469.874	0.006			
J274 - 0080	487.727	0.019	X	-116.635	0.011	9	1.8	
Fixed								
12/05/09 11:08			Y	115.057	0.006			
			Z	459.387	0.005			
J274 - 0065	527.807	0.035	X	-131.367	0.020	9	1.7	
Fixed								
12/05/09 10:47			Y	204.736	0.010			
			Z	468.407	0.009			
J274 - 0103	473.856	0.037	X	-105.891	0.022	11	1.3	
Fixed								
12/05/09 11:39			Y	86.804	0.010			
			Z	453.643	0.010			
J274 - 0067	515.343	0.023	X	-130.618	0.013	9	1.8	
Fixed								
12/05/09 10:50			Y	194.817	0.007			
			Z	458.872	0.006			
J274 - 0068	512.370	0.018	X	-129.446	0.010	9	1.8	
Fixed								
12/05/09 10:52			Y	185.364	0.006			
			Z	459.791	0.005			
J274 - 0069	507.717	0.019	X	-127.705	0.011	9	1.8	
Fixed								
12/05/09 10:53			Y	174.173	0.006			
			Z	459.490	0.005			
J274 - 0070	505.467	0.020	X	-125.980	0.012	9	1.8	
Fixed								
12/05/09 10:54			Y	165.024	0.006			
			Z	460.862	0.006			
J274 - 0071	503.620	0.024	X	-124.780	0.014	9	1.8	
Fixed								
12/05/09 10:55			Y	155.958	0.007			
			Z	462.320	0.007			
J274 - 0072	501.861	0.020	X	-123.626	0.012	9	1.8	
Fixed								
12/05/09 10:57			Y	146.592	0.006			
			Z	463.780	0.006			

J274 - 0073	500.447	0.019	X	-122.394	0.010	9	1.8
Fixed							
12/05/09 10:58			Y	137.116	0.006		
			Z	465.474	0.005		
J274 - 0074	498.459	0.019	X	-121.013	0.011	9	1.8
Fixed							
12/05/09 10:59			Y	127.392	0.006		
			Z	466.464	0.006		
J274 - 0075	497.634	0.019	X	-119.742	0.011	9	1.8
Fixed							
12/05/09 11:00			Y	118.069	0.006		
			Z	468.361	0.005		
J274 - 0076	495.533	0.023	X	-116.976	0.013	9	1.8
Fixed							
12/05/09 11:02			Y	107.584	0.007		
			Z	469.356	0.006		
J274 - 0077	496.125	0.019	X	-113.942	0.011	9	1.8
Fixed							
12/05/09 11:03			Y	99.586	0.006		
			Z	472.483	0.005		
J274 - 0064	524.607	0.022	X	-132.722	0.013	10	1.4
Fixed							
12/05/09 10:45			Y	195.160	0.007		
			Z	468.519	0.006		

Repeat vectors

Repeat Vector		Difference	Length	QA
J274 - 0087	X	-0.021	503.477	No
12/05/09 11:18	Y	0.015		
12/05/09 11:18	Z	0.034		

Adjusted vectors

Vector Identifier	Vector Length	Length Resid.		Vector Components	Resid.	Tau Test	QA
J274 - 0040	532.421	0.000	X	-130.042	0.000		No
12/05/09 10:13			Y	149.424	0.000		
			Z	494.201	0.000		
J274 - 0052	521.801	0.000	X	-127.360	0.000		No
12/05/09 10:30			Y	144.054	0.000		
			Z	485.082	0.000		
J274 - 0029	548.821	0.000	X	-137.299	0.000		No
12/05/09 09:58			Y	187.251	0.000		
			Z	497.283	0.000		
J274 - 0030	546.988	0.000	X	-136.082	0.000		No
12/05/09 10:00			Y	177.607	0.000		
			Z	499.132	0.000		
J274 - 0031	544.910	0.000	X	-134.276	0.000		No
12/05/09 10:01			Y	167.550	0.000		
			Z	500.824	0.000		
J274 - 0032	542.842	0.000	X	-132.730	0.000		No
12/05/09 10:02			Y	157.710	0.000		
			Z	502.183	0.000		
J274 - 0033	541.498	0.000	X	-131.412	0.000		No

12/05/09 10:03			Y	148.639	0.000	
			Z	503.843	0.000	
J274 - 0034	540.340	0.000	X	-129.042	0.000	No
12/05/09 10:04			Y	138.956	0.000	
			Z	505.971	0.000	
J274 - 0035	539.448	0.000	X	-126.701	0.000	No
12/05/09 10:06			Y	129.630	0.000	
			Z	508.082	0.000	
J274 - 0036	538.506	0.000	X	-124.395	0.000	No
12/05/09 10:07			Y	120.709	0.000	
			Z	509.847	0.000	
J274 - 0037	528.009	0.000	X	-122.724	0.000	No
12/05/09 10:08			Y	119.743	0.000	
			Z	499.394	0.000	
J274 - 0027	559.926	0.000	X	-137.240	0.000	No
12/05/09 09:55			Y	195.969	0.000	
			Z	506.240	0.000	
J274 - 0039	531.051	0.000	X	-127.909	0.000	No
12/05/09 10:12			Y	139.242	0.000	
			Z	496.252	0.000	
J274 - 0026	558.461	0.000	X	-139.190	0.000	No
12/05/09 09:54			Y	185.214	0.000	
			Z	508.135	0.000	
J274 - 0041	534.342	0.000	X	-131.495	0.000	No
12/05/09 10:14			Y	159.296	0.000	
			Z	492.803	0.000	
J274 - 0042	536.088	0.000	X	-132.733	0.000	No
12/05/09 10:15			Y	169.558	0.000	
			Z	490.941	0.000	
J274 - 0043	538.459	0.000	X	-134.592	0.000	No
12/05/09 10:17			Y	179.969	0.000	
			Z	489.321	0.000	
J274 - 0044	540.501	0.000	X	-135.757	0.000	No
12/05/09 10:18			Y	190.299	0.000	
			Z	487.338	0.000	
J274 - 0045	544.580	0.000	X	-134.539	0.000	No
12/05/09 10:20			Y	201.306	0.000	
			Z	487.794	0.000	
J274 - 0046	535.984	0.000	X	-132.963	0.000	No
12/05/09 10:21			Y	202.845	0.000	
			Z	477.968	0.000	
J274 - 0047	532.188	0.000	X	-134.091	0.000	No
12/05/09 10:24			Y	191.646	0.000	
			Z	478.033	0.000	
J274 - 0048	530.026	0.000	X	-132.946	0.000	No
12/05/09 10:25			Y	182.415	0.000	
			Z	479.560	0.000	
J274 - 0049	528.081	0.000	X	-131.665	0.000	No
12/05/09 10:26			Y	173.295	0.000	
			Z	481.148	0.000	
J274 - 0050	526.127	0.000	X	-130.197	0.000	No
12/05/09 10:27			Y	164.090	0.000	
			Z	482.631	0.000	
J274 - 0001	568.314	0.000	X	-129.629	0.000	No

12/05/09 09:19			Y	123.093	0.000	
			Z	539.467	0.000	
J274 - 0038	529.623	0.000	X	-125.217	0.000	No
12/05/09 10:10			Y	129.439	0.000	
			Z	498.063	0.000	
J274 - 0014	560.838	0.000	X	-136.379	0.000	No
12/05/09 09:37			Y	158.470	0.000	
			Z	520.411	0.000	
J274 - 0002	567.443	0.000	X	-133.166	0.000	
12/05/09 09:21			Y	132.262	0.000	
			Z	535.505	0.000	
J274 - 0003	568.415	0.000	X	-135.223	0.000	No
12/05/09 09:23			Y	141.514	0.000	
			Z	533.651	0.000	
J274 - 0004	569.229	0.000	X	-137.121	0.000	
12/05/09 09:24			Y	151.010	0.000	
			Z	531.428	0.000	
J274 - 0005	570.455	0.000	X	-138.947	0.000	No
12/05/09 09:25			Y	160.413	0.000	
			Z	529.509	0.000	
J274 - 0006	571.780	0.000	X	-140.539	0.000	No
12/05/09 09:26			Y	169.574	0.000	
			Z	527.661	0.000	
J274 - 0007	574.266	0.000	X	-141.811	0.000	No
12/05/09 09:27			Y	179.099	0.000	
			Z	526.872	0.000	
J274 - 0008	575.166	0.000	X	-142.457	0.000	No
12/05/09 09:29			Y	188.422	0.000	
			Z	524.423	0.000	
J274 - 0009	577.155	0.000	X	-141.699	0.000	No
12/05/09 09:30			Y	196.896	0.000	
			Z	523.700	0.000	
J274 - 0010	569.044	0.000	X	-139.290	0.000	No
12/05/09 09:31			Y	197.670	0.000	
			Z	515.108	0.000	
J274 - 0011	565.994	0.000	X	-140.451	0.000	No
12/05/09 09:33			Y	187.301	0.000	
			Z	515.307	0.000	
J274 - 0028	551.543	0.000	X	-135.660	0.000	No
12/05/09 09:57			Y	197.346	0.000	
			Z	496.841	0.000	
J274 - 0013	561.944	0.000	X	-137.944	0.000	No
12/05/09 09:35			Y	167.874	0.000	
			Z	518.238	0.000	
J274 - 0053	520.069	0.000	X	-125.623	0.000	No
12/05/09 10:31			Y	133.882	0.000	
			Z	486.586	0.000	
J274 - 0015	559.753	0.000	X	-135.013	0.000	No
12/05/09 09:38			Y	149.473	0.000	
			Z	522.257	0.000	
J274 - 0016	559.155	0.000	X	-133.311	0.000	No
12/05/09 09:39			Y	140.913	0.000	
			Z	524.430	0.000	
J274 - 0017	558.481	0.000	X	-131.320	0.000	No

12/05/09 09:40			Y	131.795	0.000	
			Z	526.580	0.000	
J274 - 0018	558.551	0.000	X	-127.856	0.000	No
12/05/09 09:41			Y	121.203	0.000	
			Z	530.039	0.000	
J274 - 0019	548.245	0.000	X	-125.669	0.000	No
12/05/09 09:43			Y	118.232	0.000	
			Z	520.386	0.000	
J274 - 0020	548.543	0.000	X	-128.210	0.000	No
12/05/09 09:46			Y	127.423	0.000	
			Z	517.905	0.000	
J274 - 0021	549.248	0.000	X	-130.297	0.000	No
12/05/09 09:48			Y	136.651	0.000	
			Z	515.774	0.000	
J274 - 0022	550.400	0.000	X	-132.205	0.000	No
12/05/09 09:49			Y	145.760	0.000	
			Z	514.019	0.000	
J274 - 0023	551.902	0.000	X	-133.832	0.000	No
12/05/09 09:50			Y	155.002	0.000	
			Z	512.503	0.000	
J274 - 0024	554.509	0.000	X	-136.040	0.000	No
12/05/09 09:51			Y	165.739	0.000	
			Z	511.375	0.000	
J274 - 0025	556.311	0.000	X	-137.766	0.000	No
12/05/09 09:52			Y	175.130	0.000	
			Z	509.737	0.000	
J274 - 0012	563.924	0.000	X	-139.797	0.000	No
12/05/09 09:34			Y	177.096	0.000	
			Z	516.821	0.000	
J274 - 0091	498.831	0.000	X	-127.075	0.000	No
12/05/09 11:23			Y	198.442	0.000	
			Z	439.665	0.000	
J274 - 0051	524.024	0.000	X	-128.829	0.000	No
12/05/09 10:28			Y	154.285	0.000	
			Z	483.942	0.000	
J274 - 0081	489.411	0.000	X	-118.929	0.000	No
12/05/09 11:10			Y	125.412	0.000	
			Z	457.876	0.000	
J274 - 0082	491.101	0.000	X	-120.265	0.000	No
12/05/09 11:12			Y	136.063	0.000	
			Z	456.293	0.000	
J274 - 0083	493.255	0.000	X	-121.749	0.000	No
12/05/09 11:13			Y	146.375	0.000	
			Z	455.029	0.000	
J274 - 0084	495.432	0.000	X	-123.093	0.000	No
12/05/09 11:14			Y	156.394	0.000	
			Z	453.698	0.000	
J274 - 0085	497.532	0.000	X	-124.575	0.000	No
12/05/09 11:15			Y	165.721	0.000	
			Z	452.278	0.000	
J274 - 0086	500.216	0.000	X	-126.097	0.000	No
12/05/09 11:17			Y	174.994	0.000	
			Z	451.324	0.000	
J274 - 0087	503.438	0.041	X	-127.519	0.020	

12/05/09 11:18			Y	185.334	-0.014	
			Z	450.378	-0.032	
J274 - 0087	503.438	0.002	X	-127.519	-0.000	
12/05/09 11:18			Y	185.334	0.001	
			Z	450.378	0.001	
J274 - 0088	506.136	0.000	X	-127.820	0.000	No
12/05/09 11:19			Y	195.737	0.000	
			Z	448.913	0.000	
J274 - 0079	486.203	0.000	X	-114.978	0.000	No
12/05/09 11:07			Y	105.397	0.000	
			Z	460.505	0.000	
J274 - 0090	502.971	0.000	X	-126.575	0.000	No
12/05/09 11:21			Y	209.354	0.000	
			Z	439.465	0.000	
J274 - 0078	484.974	0.000	X	-112.049	0.000	No
12/05/09 11:05			Y	96.263	0.000	
			Z	461.929	0.000	
J274 - 0092	495.962	0.000	X	-125.653	0.000	No
12/05/09 11:24			Y	188.865	0.000	
			Z	441.044	0.000	
J274 - 0093	492.931	0.000	X	-124.754	0.000	No
12/05/09 11:26			Y	178.760	0.000	
			Z	442.111	0.000	
J274 - 0094	490.117	0.000	X	-123.599	0.000	No
12/05/09 11:27			Y	169.836	0.000	
			Z	442.824	0.000	
J274 - 0095	487.727	0.000	X	-122.075	0.000	No
12/05/09 11:28			Y	161.390	0.000	
			Z	443.766	0.000	
J274 - 0096	485.674	0.000	X	-120.874	0.000	No
12/05/09 11:29			Y	152.600	0.000	
			Z	444.952	0.000	
J274 - 0097	483.497	0.000	X	-119.853	0.000	No
12/05/09 11:30			Y	143.029	0.000	
			Z	446.034	0.000	
J274 - 0098	481.856	0.000	X	-118.125	0.000	No
12/05/09 11:32			Y	133.996	0.000	
			Z	447.523	0.000	
J274 - 0099	479.535	0.000	X	-116.490	0.000	No
12/05/09 11:33			Y	124.013	0.000	
			Z	448.336	0.000	
J274 - 0100	477.544	0.000	X	-114.761	0.000	No
12/05/09 11:34			Y	114.230	0.000	
			Z	449.255	0.000	
J274 - 0101	476.074	0.000	X	-113.138	0.000	No
12/05/09 11:35			Y	105.057	0.000	
			Z	450.344	0.000	
J274 - 0102	475.442	0.000	X	-111.311	0.000	No
12/05/09 11:37			Y	96.003	0.000	
			Z	452.148	0.000	
J274 - 0089	508.747	0.000	X	-127.534	0.000	No
12/05/09 11:20			Y	204.825	0.000	
			Z	447.889	0.000	
J274 - 0066	518.536	0.000	X	-129.509	0.000	No

12/05/09 10:48			Y	205.023	0.000	
			Z	458.337	0.000	
J274 - 0054	519.553	0.000	X	-123.698	0.000	No
12/05/09 10:32			Y	124.662	0.000	
			Z	488.972	0.000	
J274 - 0055	518.145	0.000	X	-120.701	0.000	No
12/05/09 10:33			Y	115.085	0.000	
			Z	490.572	0.000	
J274 - 0056	508.553	0.000	X	-121.024	0.000	No
12/05/09 10:35			Y	117.945	0.000	
			Z	479.654	0.000	
J274 - 0057	509.790	0.000	X	-123.402	0.000	No
12/05/09 10:37			Y	128.210	0.000	
			Z	477.724	0.000	
J274 - 0058	511.410	0.000	X	-124.634	0.000	No
12/05/09 10:38			Y	137.910	0.000	
			Z	476.432	0.000	
J274 - 0059	513.358	0.000	X	-126.073	0.000	No
12/05/09 10:39			Y	147.865	0.000	
			Z	475.161	0.000	
J274 - 0060	515.121	0.000	X	-127.345	0.000	No
12/05/09 10:41			Y	157.523	0.000	
			Z	473.623	0.000	
J274 - 0061	517.572	0.000	X	-128.712	0.000	No
12/05/09 10:42			Y	167.703	0.000	
			Z	472.429	0.000	
J274 - 0062	520.029	0.000	X	-130.385	0.000	No
12/05/09 10:43			Y	177.162	0.000	
			Z	471.215	0.000	
J274 - 0063	522.172	0.000	X	-131.442	0.000	No
12/05/09 10:44			Y	186.024	0.000	
			Z	469.874	0.000	
J274 - 0080	487.727	0.000	X	-116.635	0.000	No
12/05/09 11:08			Y	115.057	0.000	
			Z	459.387	0.000	
J274 - 0065	527.807	0.000	X	-131.367	0.000	No
12/05/09 10:47			Y	204.736	0.000	
			Z	468.407	0.000	
J274 - 0103	473.856	0.000	X	-105.891	0.000	No
12/05/09 11:39			Y	86.804	0.000	
			Z	453.643	0.000	
J274 - 0067	515.343	0.000	X	-130.618	0.000	No
12/05/09 10:50			Y	194.817	0.000	
			Z	458.872	0.000	
J274 - 0068	512.370	0.000	X	-129.446	0.000	No
12/05/09 10:52			Y	185.364	0.000	
			Z	459.791	0.000	
J274 - 0069	507.717	0.000	X	-127.705	0.000	No
12/05/09 10:53			Y	174.173	0.000	
			Z	459.490	0.000	
J274 - 0070	505.467	0.000	X	-125.980	0.000	No
12/05/09 10:54			Y	165.024	0.000	
			Z	460.862	0.000	
J274 - 0071	503.620	0.000	X	-124.780	0.000	No

12/05/09 10:55			Y	155.958	0.000	
			Z	462.320	0.000	
J274 - 0072	501.861	0.000	X	-123.626	0.000	No
12/05/09 10:57			Y	146.592	0.000	
			Z	463.780	0.000	
J274 - 0073	500.447	0.000	X	-122.394	0.000	No
12/05/09 10:58			Y	137.116	0.000	
			Z	465.474	0.000	
J274 - 0074	498.459	0.000	X	-121.013	0.000	No
12/05/09 10:59			Y	127.392	0.000	
			Z	466.464	0.000	
J274 - 0075	497.634	0.000	X	-119.742	0.000	No
12/05/09 11:00			Y	118.069	0.000	
			Z	468.361	0.000	
J274 - 0076	495.533	0.000	X	-116.976	0.000	No
12/05/09 11:02			Y	107.584	0.000	
			Z	469.356	0.000	
J274 - 0077	496.125	0.000	X	-113.942	0.000	No
12/05/09 11:03			Y	99.586	0.000	
			Z	472.483	0.000	
J274 - 0064	524.607	0.000	X	-132.722	0.000	No
12/05/09 10:45			Y	195.160	0.000	
			Z	468.519	0.000	