ARCHIVO DEL LABORATORIO DE DOCUMENTACIÓN GEOMÉTRICA DEL PATRIMONIO

ARCHIVE OF THE LABORATORY FOR THE GEOMETRIC DOCUMENTATION OF HERITAGE

Sección de memorias / Reports section

36-1

Información general / General information		
ELEMENTO:	R_Lumbreras_Piqueras	:ELEMENT
TITULO:	Seguimiento topográfico y levantamiento fotogramétrico de la excavación arqueológica de la Venta de Piqueras, campaña de 2005. Lumbreras (La Rioja)	:TITLE
FECHA:	Septiembre 2005 / September 2005	:DATE
NUMERO:	LDGP_mem_036-1	:NUMBER
IDIOMA:	español / Spanish	:LANGUAGE

Resumen	
TITULO:	Seguimiento topográfico y levantamiento fotogramétrico de la excavación arqueológica de la Venta de Piqueras, campaña de 2005. Lumbreras (La Rioja)
DESCRIPCION GEOMÉTRICA:	Se trata de los restos de un puente del que persisten los pilares a ambos lados del río Piqueras en su origen, realizados en piedra y con restos del empedrado que formaba el suelo.
DOCUMENTACION:	La documentación realizada consiste en pares estereoscópicos que han sido restituidos formando un modelo digital vectorial del despiece.
TECNICAS:	topografía, fotogrametría
PRODUCTOS:	• Modelos tridimensional alámbrico. • Planos en planta y secciones. • Colección de pares.
DESCRIPTORES NATURALES:	patrimonio, puente
DESCRIPTORES CONTROLADOS:	(Procedentes del Tesauro UNESCO [http://databases.unesco.org/thessp/]) Patrimonio Cultural, Puente, Reconocimiento Topográfico, Fotogrametría

Abstract	
TITLE:	Survey and photogrammetric record of the archaeological excavation in Venta de Piqueras (Lumbreras, Spain), campaign 2005.
GEOMETRIC DESCRIPTION:	It consists of the remains of a bridge, in particular the two pillars in both sides of the stream. These pillars are made of stones and the some rest of the stone pavement are still visible.
DOCUMENTATION:	The final product is a 3D model (wireframe) generated from stereopairs.
METHODOLOGIES:	surveying, photogrammetry
PRODUCTS:	• 3D model (wireframe). • Plans and cross-sections. • Collection of stereopairs.
NATURAL KEYWORDS:	heritage, bridge
CONTROLLED KEYWORDS:	(From the UNESCO's thesaurus [http://databases.unesco.org/thesaurus/]) Cultural Heritage, Bridges, Surveying, Photogrammetry

Reutilización / Re-use		
REUTILIZACION:	Los siguientes términos corresponden al Real Decreto 1495/2011, de 24 de octubre por el que se desarrolla la Ley 37/2007, de 16 de noviembre, sobre reutilización de la información del sector público, para el ámbito del sector público estatal. "Son de aplicación las siguientes condiciones generales para la reutilización de los documentos sometidos a ellas: 1. Está prohibido desnaturalizar el sentido de la información. 2. Debe citarse la fuente de los documentos objeto de la reutilización. Esta cita podrá realizarse de la siguiente manera: "Origen de los datos: [órgano administrativo, organismo o entidad del sector público estatal de que se trate]". 3. Debe mencionarse la fecha de la última actualización de los documentos objeto de la reutilización, siempre cuando estuviera incluida en el documento original. 4. No se podrá indicar, insinuar o sugerir que la [órgano administrativo, organismo o entidad del sector público estatal de que se trate] titular de la información reutilizada participa, patrocina o apoya la reutilización que se lleve a cabo con ella. 5. Deben conservarse, no alterarse ni suprimirse los metadatos sobre la fecha de actualización y las condiciones de reutilización aplicables incluidos, en su caso, en el documento puesto a disposición para su reutilización." / The following terms come from the Royal Decree 1495/2011, of 24th October 2011, whereby the Law 37/2007, of November 16, on the re-use of public sector information, is developed for the public state sector. "The following general terms shall apply to all re-usable document availability methods: 1. The information must not be distorted. 2. The original source of re-usable documents must be cited. 3. The date of the latest update of re-usable documents must be indicated when it appears in the original document. 4. It must not be mentioned or suggested that the public sector agencies, bodies or entities are involved in, sponsor or support the re-use of information being made. 5. Metadata indicating the latest update and the applicable terms of re-use included in re-usable documents made available by public agencies or bodies must not be deleted or altered."	:RE-USE

Estructura / **Framework**		
ID PERMANENTE:	http://hdl.handle.net/10810/14342	:PERMANENT ID
ESTRUCTURA:	**ldgp_mem036-1_Lumbreras_Piqueras.pdf**: este documento / this document. **ldgp_LUM05_fot_piqueras??.jpeg:** 3 fotografías de documentación / 3 pictures for documentation purposes.	:FRAMEWORK

Cita completa recomendada / **Recomended full citation**		
CITA:	Laboratorio de Documentación Geométrica del Patrimonio (Universidad del País Vasco-Euskal Herriko Unibertsitatea UPV/EHU) –LDGP-. *Seguimiento topográfico y levantamiento fotogramétrico de la excavación arqueológica de la Venta de Piqueras, campaña de 2005. Lumbreras (La Rioja)*. 2005	:CITATION

Comentarios / **Feedback**		
NOTA:	Este documento forma parte del contenido generado en el Laboratorio de Documentación Geométrica del Patrimonio de la UPV/EHU y ha sido publicado con fines docentes y/o de investigación, atendiendo a los objetivos del Laboratorio. Es muy importante para nosotros conocer la utilidad del material suministrado a los usuarios finales así como las posibilidades de mejora en el servicio que podemos realizar; por lo tanto, agradecemos cualquier comentario o sugerencia que nos quiera hacer llegar, para lo cual, ponemos a su disposición nuestra dirección de correo electrónico ldgp@ehu.es / This document is part of the content generated by the Laboratory for Geometrical Documentation of Heritage (UPV/EHU). It was published for teaching purposes and research, in relation with the goals of the Laboratory. Feedback about the real utility of this information is most important for us, therefore, we appreciate any comment or suggestion for improvements (please, do refer to the following e-mail address: ldgp@ehu.es).	:NOTE

Seguimiento topográfico y levantamiento fotogramétrico de la excavación arqueológica de la Venta de Piqueras, campaña de 2005. Lumbreras (La Rioja).
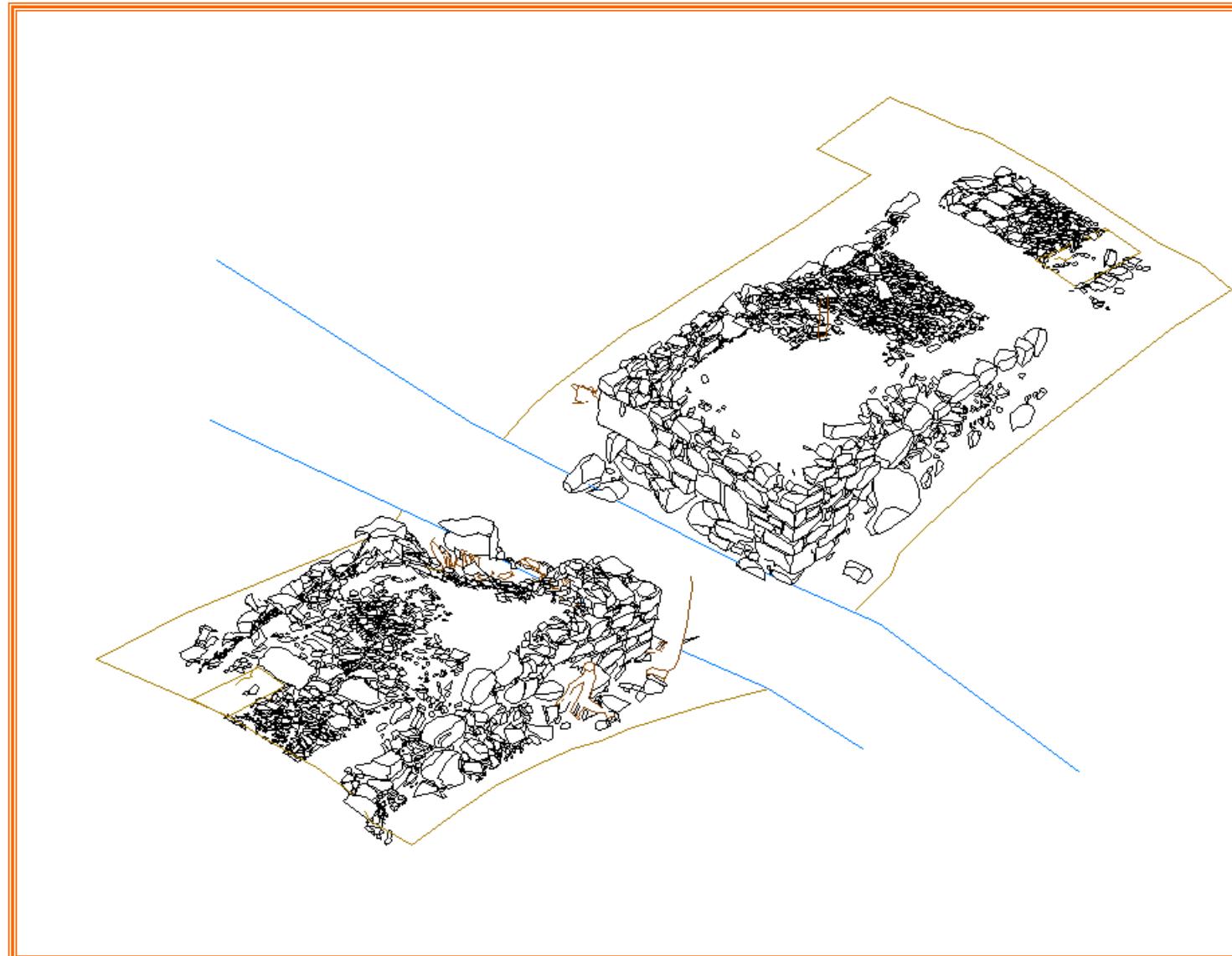
Dirección: José Manuel Valle Melón

Equipo: Ane Lopetegi Galarraga
Álvaro Rodríguez Miranda

Vitoria-Gasteiz, septiembre de 2005

eman ta zabal zazu

universidad   euskal herriko
del país vasco   unibertsitatea

Seguimiento topográfico y levantamiento fotogramétrico de la excavación arqueológica de la Venta de Piqueras, campaña Del 2005.
Lumbreras (La Rioja).

Introducción

Dentro del los estudios históricos sobre el alto valle del río Iregua, se ha intervenido en el presente año 2005, en los restos de un puente situado en las proximidades de la Venta de Piqueras. A petición de la Consejería de Educación, Cultura y Deportes del Gobierno de La Rioja y siguiendo las indicaciones del arqueólogo responsable de los trabajos D. José María Tejado, el Laboratorio de Documentación Geométrica del Patrimonio de la Universidad del País Vasco realizó la documentación geométrica de los restos una vez que quedaron al descubierto, tras finalizar la excavación correspondiente a la presente campaña.

Realizada una visita previa de planificación se decidió tomar pares fotogramétricos estereoscópicos de los diferentes alzados así como de algunas zonas en las que se había conservado el pavimento de la calzada. A partir de estos pares se restituirían tanto la forma general como el despiece del puente, realizando además un levantamiento volumétrico del conjunto.

Localización

El municipio de Lumbreras se encuentra a 51 Km. de Logroño y 1.184 metros de altitud, en la subcomarca del Camero Nuevo que se extiende a lo largo del río Iregua, en una zona que comprende 13 villas históricas que disfrutaban mancomunadamente de un amplio espacio de bosque y pastizal llamado Pineda en las laderas del Puerto de Piqueras.
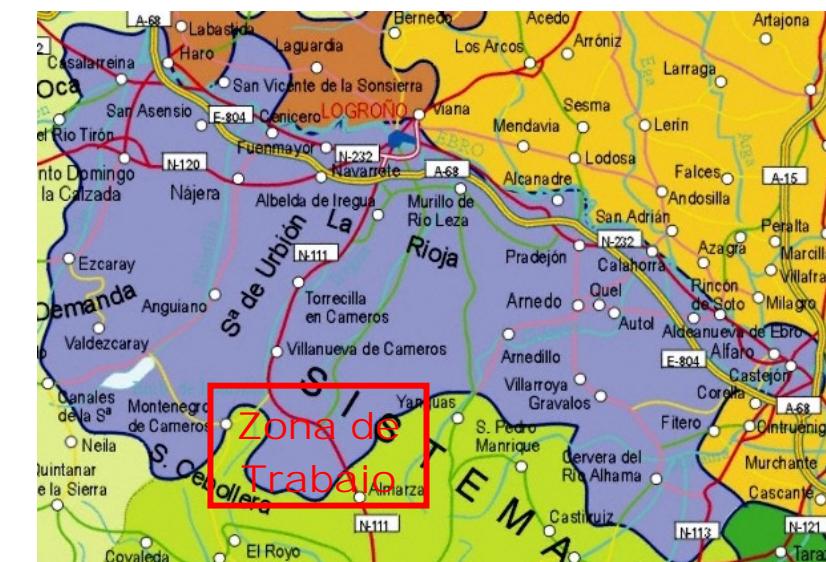
Fig. 1. Localización del yacimiento.

Planificación del trabajo

Los diferentes trabajos se organizan en la siguiente secuencia, en la que se han marcado en rojo los trabajos de campo, en azul los de gabinete y en verde los resultados finales.

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┌─────────────────┐
│     Visita      │
│   preliminar    │
└────────┬────────┘
         │
┌────────▼────────┐
│  Planificación  │
└────────┬────────┘
    ┌────┴────┐
    │         │
┌───▼─────┐ ┌─▼────────┐
│ Toma de │ │ Toma de  │
│ pares   │ │ puntos de│
│fotogramé│ │          │
└───┬─────┘ └──────────┘
    │◄──────────┘
┌───▼─────────────┐
│   Restitución   │
└────────┬────────┘
         │
┌────────▼────────┐
│     Edición     │
└────────┬────────┘
         │
┌────────▼────────┐
│     Modelo      │
│   Vectorial     │
└────────┬────────┘
         │
┌────────▼────────┐
│     Planos      │
└─────────────────┘
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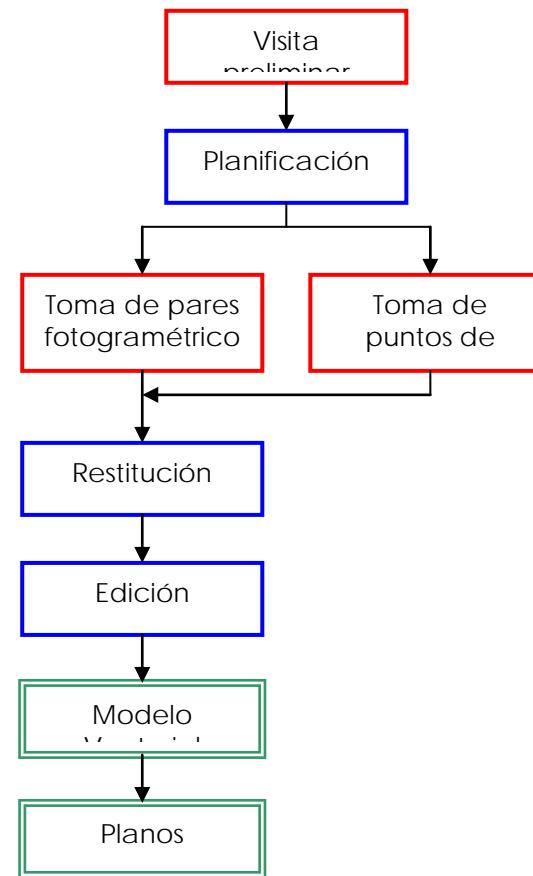
Fig. 2. Organigrama de trabajo.

Trabajos topográficos

Se obtienen las coordenadas de los puntos de apoyo, que se han materializado mediante señales de puntería de 4x4 cm y a su lado se escribe con tiza su número.

Fig. 3. Preseñalización.

Se ha utilizado un sistema local de coordenadas al considerarse innecesario realizar el enlace a la red geodésica.

Trabajos fotogramétricos

Para la toma de pares fotogramétricos se utiliza una cámara digital Canon Eos 300-D calibrada.

Los pares horizontales se han obtenido con trípode para garantizar la estabilidad de las tomas, para las fotografías cenitales se ha utilizado un sistema de

barras que permiten elevar la cámara hasta 4,5 metros permitiendo su desplazamiento longitudinal para obtener pares estereoscópicos.

El conjunto de pares restituidos han dado como resultado un modelo tridimensional de los restos del puente a partir del cual se han generado los planos necesarios para su representación.

Fig. 4 y 5. Toma de pares.

Los pares así obtenidos se orientan y restituyen utilizando un restituidor digital Softplotter.
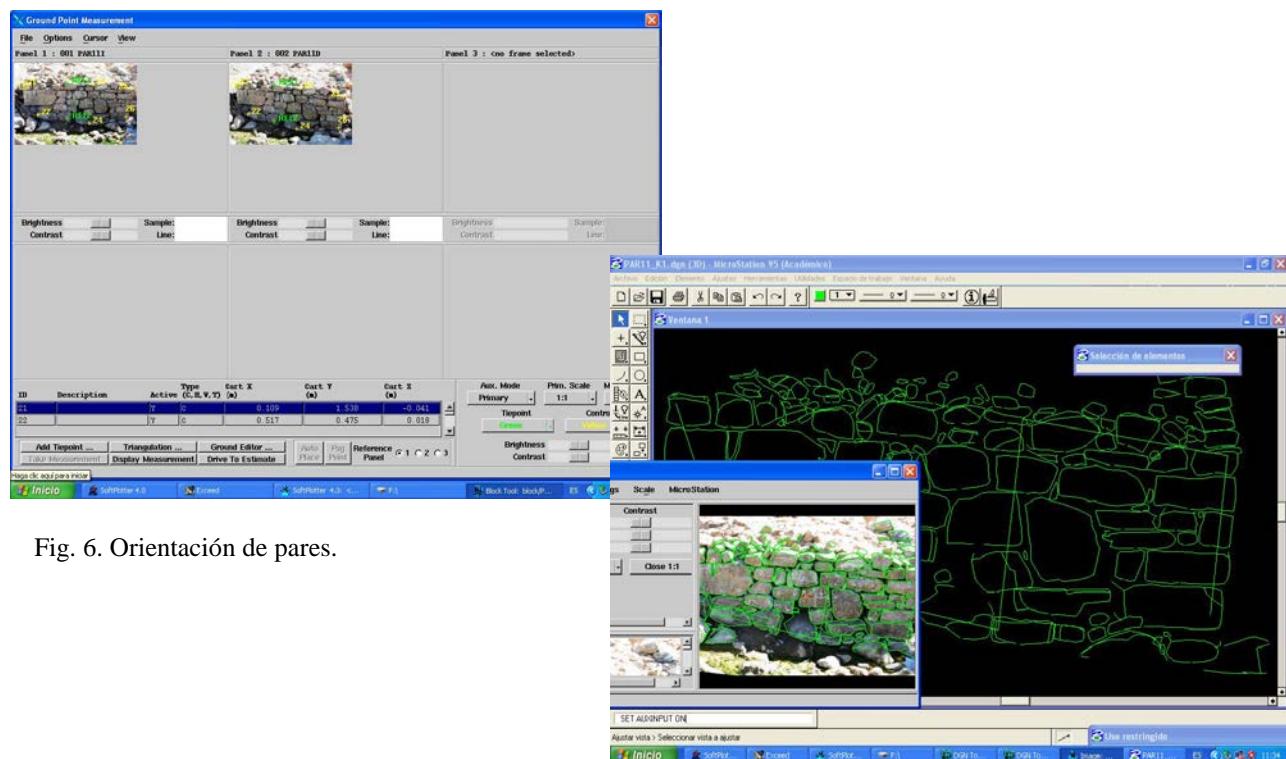
Fig. 6. Orientación de pares.

Fig. 7. Restitución fotogramétrica.
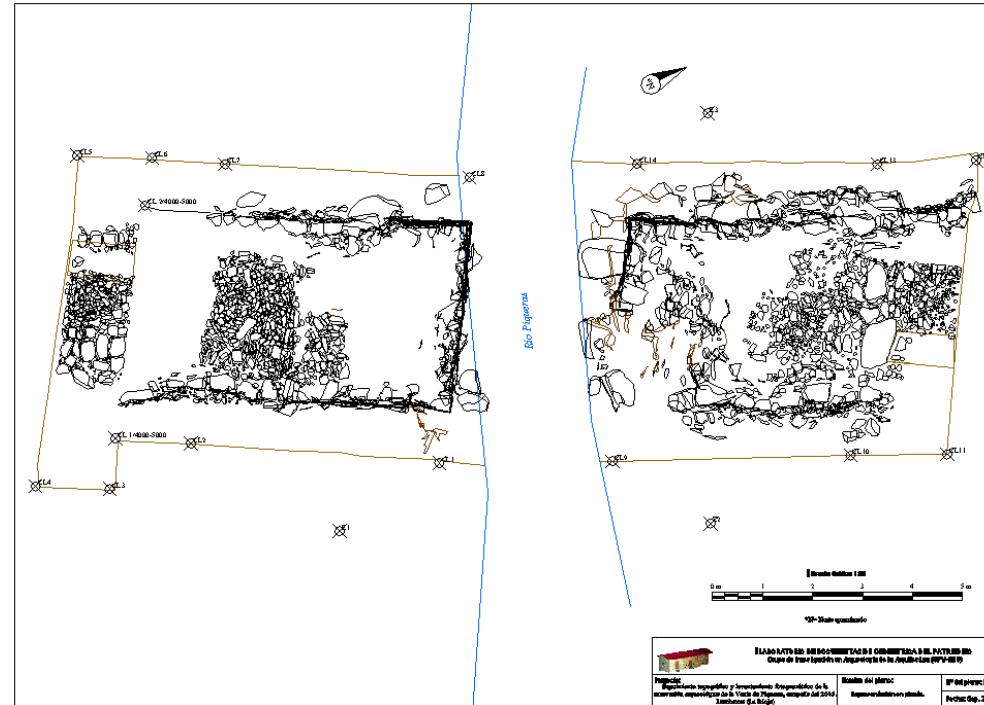
Fig. 8. Plano de planta.
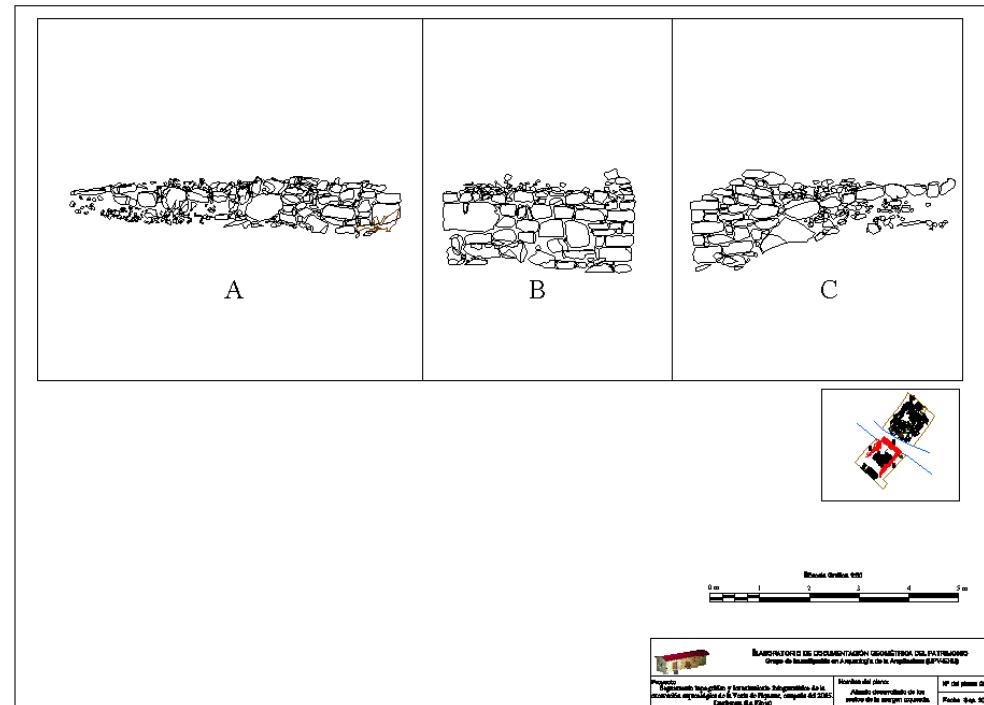
Fig. 9. Representación de alzados.

Anexo 1: Certificados de calibración.

Estación topográfica

Manufacturer Confirmation

Garantie du fabricant
Certificación del fabricante
Conferma del fabbricante
Herstellerbestätigung

Manufacturer: Leica-Geosystems AG, Heerbrugg

Certificate No.:   MC05737436-213379

Type: TCR1205 R300

Serial No.:   213379

This is to confirm that the product detailed hereon has been tested and complies with the manufacturer's specifications. This product has been designed and manufactured in compliance with ISO 9001 standard.

Nous confirmons que le produit mentionné a été testé et qu'il correspond aux spécifications du fabricant. Le produit a été développé et fabriqué selon les normes ISO 9001.

Certificamos que el producto indicado se ha ensayado y que corresponde a las especificaciones del fabricante. El producto ha sido desarrollado y fabricado conforme al estándar ISO 9001.

Con la presente confermiamo che il prodotto qui specificato è stato sottoposto a test ed è conforme alle specifiche del fabbricante. Questo prodotto è stato progettato e fabbricato conformemente allo standard ISO 9001.

Wir bestätigen, dass das aufgeführte Produkt geprüft wurde und den Herstellspezifikationen entspricht. Das Produkt wurde unter den Anforderungen der ISO 9001 entwickelt und produziert.

Leica Geosystems AG
CH-9435 Heerbrugg
Switzerland

Issued: January 7, 2005

Peter Perkhofer
Quality Coordinator

TQM
ISO 9001

Leica
Geosystems

Cámara fotogramétrica

FICHA DE CALIBRACIÓN

Cámara: **Canon EOS-300D, focal 4.805,7 celdillas (emc. 3,3 cel)** – Junio 2004-
(Nº Serie: 219063)

Distorsión radial: $r \rightarrow 0,0000$
$r^3 \rightarrow -3,38$ e-9 (emc. 3,7 e-11)
$r^5 \rightarrow 0,0000$
$r^7 \rightarrow 0,0000$

Distorsión asimétrica: $r \rightarrow 0,0000$
$r^3 \rightarrow 0,0000$

Punto principal: $x \rightarrow$ 0 cel (emc. 1,2 cel)
$y \rightarrow$ 0 cel (emc. 1,3 cel)

Gráfica de corrección:

Distorsión Canon EOS-300D
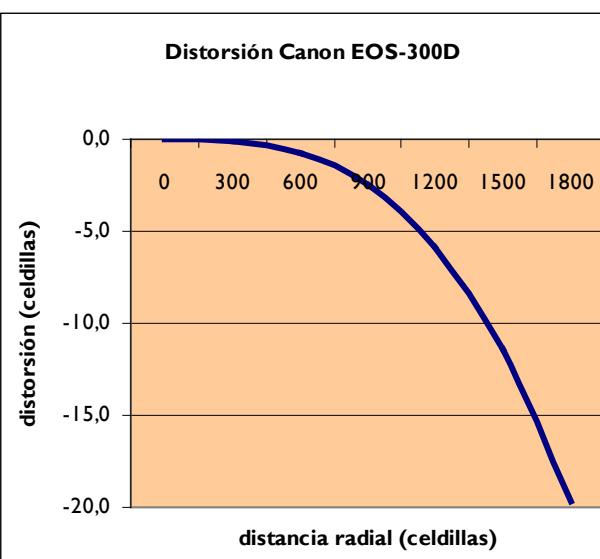
Distancia Radial (cel)	Distorsión (cel)
0	0,0
300	-0,1
600	-0,7
900	-2,5
1200	-5,8
1500	-11,4
1800	-19,7

NOTA: Aplicar con precaución esta corrección, especialmente en los bordes del formato, donde los valores pueden no corresponder a las distorsiones reales.

Coordenadas de las marcas fiduciales:
Distribución:

Marca	X(mm)	Y(mm)
1	-1.536,0	-1024,0
2	1.536,0	-1024,0
3	1.536,0	1024,0
4	-1.536,0	1024,0
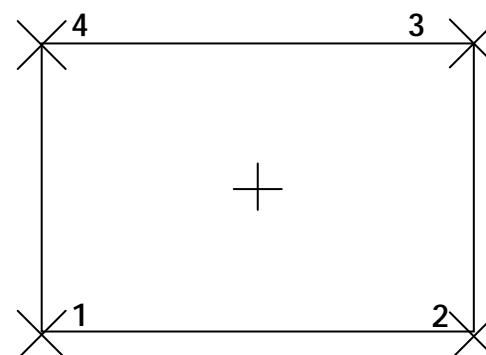
NOTA: Las marcas fiduciales coinciden con las esquinas del formato a 3.072 x 2.048 celdillas.

Cámara	Focal	Formato	Margen	Recubrimiento	Efectivo (%)
Canon EOS	4805,7 cel	3.072x2.048	0 %	Min: 48% Max: 85%	Min: 48% Max: 85%

Alejamiento	Esc. fotog.	Esc. plano	Espacio Objeto (m)		Base (m)		Espacio mod. horizon. (m)		Esp. mod. vertical (m)
d (m)	(1/n)	(1/n)	hor.	ver.	max (1/3 d)	mín. (1/10 d)	mín.	max	
1,00	0	0	0,64	0,43	0,33	0,10	0,31	0,54	0,43
1,50	0	0	0,96	0,64	0,50	0,15	0,46	0,81	0,64
2,00	1	0	1,28	0,85	0,67	0,20	0,61	1,08	0,85
2,50	1	0	1,60	1,06	0,83	0,25	0,76	1,35	1,06
3,00	1	0	1,92	1,28	1,00	0,30	0,92	1,62	1,28
3,50	1	0	2,24	1,49	1,17	0,35	1,07	1,89	1,49
4,00	1	0	2,56	1,70	1,33	0,40	1,22	2,16	1,70
4,50	1	0	2,88	1,92	1,50	0,45	1,38	2,43	1,92
5,00	1	0	3,19	2,13	1,67	0,50	1,53	2,69	2,13
5,50	2	0	3,51	2,34	1,83	0,55	1,68	2,96	2,34
6,00	2	0	3,83	2,56	2,00	0,60	1,83	3,23	2,56
6,50	2	0	4,15	2,77	2,17	0,65	1,99	3,50	2,77
7,00	2	0	4,47	2,98	2,33	0,70	2,14	3,77	2,98
7,50	2	0	4,79	3,19	2,50	0,75	2,29	4,04	3,19
8,00	2	0	5,11	3,41	2,67	0,80	2,44	4,31	3,41
8,50	3	1	5,43	3,62	2,83	0,85	2,60	4,58	3,62
9,00	3	1	5,75	3,83	3,00	0,90	2,75	4,85	3,83
9,50	3	1	6,07	4,05	3,17	0,95	2,90	5,12	4,05
10,00	3	1	6,39	4,26	3,33	1,00	3,06	5,39	4,26
10,50	3	1	6,71	4,47	3,50	1,05	3,21	5,66	4,47
11,00	3	1	7,03	4,69	3,67	1,10	3,36	5,93	4,69
11,50	3	1	7,35	4,90	3,83	1,15	3,51	6,20	4,90
12,00	4	1	7,67	5,11	4,00	1,20	3,67	6,47	5,11
12,50	4	1	7,99	5,32	4,17	1,25	3,82	6,74	5,32
13,00	4	1	8,31	5,54	4,33	1,30	3,97	7,01	5,54
13,50	4	1	8,63	5,75	4,50	1,35	4,13	7,28	5,75
15,00	4	1	9,58	6,39	5,00	1,50	4,58	8,08	6,39
17,50	5	1	11,18	7,45	5,83	1,75	5,35	9,43	7,45
20,00	6	1	12,78	8,52	6,67	2,00	6,11	10,78	8,52

Ficha Técnica

Fecha de calibración: Junio 2004
Realizado por: Laboratorio de Documentación Geométrica del Patrimonio (UPV-EHU)
Método de cálculo: Autocalibración
Notas: Datos obtenidos a partir de 6 tomas fotográficas en un polígono de calibración situado en el Laboratorio de Fotogrametría de la UPV-EHU. El cálculo se ha realizado con programas propios del LDGP, ver página web del Laboratorio (http://www.vc.ehu.es/docarq).

Anexo 2: Reseñas de los pares fotogramétricos.

Reseñas de los pares fotogramétricos

Para la orientación de los pares fotogramétricos es necesario disponer de las coordenadas de los puntos de apoyo, estos se han materializado mediante dianas cuadradas de 4x4 cm en forma de cruz blanca y negra.
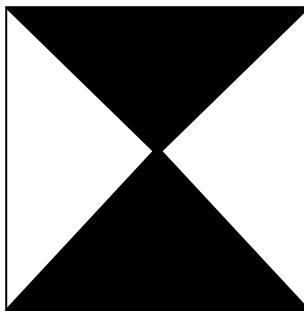
En los pares de los alzados, al lado de cada señal se ha escrito con tiza el número que le corresponde, para los pares cenitales, la numeración se corresponde con el siguiente croquis:

Las coordenadas de los puntos de apoyo son:

Punto	X	Y	Z
D001	995,786	997,255	1000,432
D003	997,349	1000,444	999,938
D004	995,768	999,154	1000,577
D005	996,264	999,891	1000,664
D006	996,691	1000,577	1000,648
D007	997,282	1001,205	1000,585
D008	996,598	1001,629	1000,732
D010	996,231	1000,901	1000,733
D011	995,722	1000,197	1000,679
D012	995,192	999,500	1000,614
D013	994,939	999,756	1000,624
D014	995,324	1000,427	1000,691
D015	997,930	1001,760	1000,605
D016	995,713	1001,165	1000,762
D017	995,251	1001,321	1000,715
D018	994,874	1000,689	1000,696
D019	994,454	1000,077	1000,620
D020	993,926	1000,389	1000,573
D021	994,419	1001,031	1000,595
D022	994,827	1001,455	1000,655
D023B	994,633	996,385	1000,513
D024B	994,057	996,805	1000,509
D025	993,356	997,185	1000,491
D026	998,032	1001,558	999,617
D027	992,971	997,450	1000,484
D028	992,344	997,886	1000,407
D029	992,614	998,282	1000,357
D030	993,366	997,956	1000,466
D031	993,751	997,687	1000,451
D032	994,346	997,255	1000,451
D033	995,086	996,756	1000,499
D034	995,317	997,329	1000,386
D035	994,700	997,789	1000,463
D036	994,084	998,148	1000,487
D037	998,594	1002,775	1000,501

Punto	X	Y	Z
D038	993,614	998,464	1000,463
D039	992,985	998,893	1000,411
D040	998,830	1002,984	999,996
D041	1000,725	1007,551	1000,465
D042	1000,118	1006,020	999,257
D043	997,775	1007,412	1000,252
D044	998,127	1007,155	999,158
D045	997,027	1008,059	1000,432
D046	997,012	1007,947	999,382
D047	1000,709	1013,377	1000,193
D048	1000,237	1012,600	1000,260
D048B	999,797	1011,987	1000,327
D049	999,344	1011,357	1000,392
D050	998,953	1010,783	1000,508
D051	999,566	1010,384	1000,469
D052	999,873	1011,062	1000,430
D053	1000,318	1011,740	1000,436
D054	1000,800	1012,340	1000,269
D055	998,795	1003,070	1000,343
D056	1001,319	1013,006	1000,220
D057	1001,788	1012,661	1000,216
D058	1001,288	1011,942	1000,252
D059	1000,833	1011,381	1000,386
D060	1000,403	1010,832	1000,502
D061	999,927	1010,148	1000,506
D062	999,570	1009,708	1000,504
D063	1000,030	1009,423	1000,540
D064	1000,294	1009,882	1000,524
D065	1000,812	1010,460	1000,470
D066	998,480	1003,337	999,280
D067	1001,262	1011,151	1000,238
D068	1001,944	1011,362	1000,220
D069	1001,653	1010,875	1000,262
D070	1001,259	1010,215	1000,438
D071	1000,834	1009,484	1000,459
D100	1000,563	1009,089	1000,524
D101	996,851	1004,365	1000,353
D102	996,949	1004,339	998,941
D103	995,669	1005,081	1000,182
D104	995,711	1005,029	999,112

Punto	X	Y	Z
D105	993,202	1000,411	1000,620
D106	993,105	1000,597	999,967
D107	993,604	1001,234	1000,510
D108	996,063	998,429	1000,509
D109	993,478	1001,307	1000,060
D110	993,967	1001,973	1000,447
D111	993,770	1002,044	999,718
D112	994,282	1002,376	1000,416
D113	994,086	1002,508	999,768
D114	994,917	1003,381	1000,528
D115	994,584	1003,400	999,996
D116	994,276	1003,598	999,415
D117	995,233	1004,019	1000,752
D118	995,072	1004,162	999,789
D119	996,071	998,177	1000,020
D120	995,195	1004,051	999,028
D121	995,449	1004,875	1000,307
D122	995,595	1005,064	999,639
D123	995,589	1004,998	999,047
D124	996,881	1008,001	1000,268
D125	996,943	1008,070	999,244
D126	997,387	1008,782	1000,630
D127	997,369	1008,700	999,356
D128	997,655	1009,407	1000,531
D129	997,244	1009,476	999,676
D130	998,015	1010,216	1000,358
D131	996,454	999,168	1000,496
D201	997,699	1010,329	999,941
D202	998,237	1010,654	1000,552
D203	997,815	1010,736	999,791
D204	998,645	1011,305	1000,531
D205	998,071	1011,436	999,806
D206	998,867	1012,036	1000,219
D207	998,331	1012,186	999,809
D208	999,316	1012,356	1000,223
D209	998,785	1012,822	999,861
D210	999,416	1013,473	1000,363
D211	996,487	999,128	999,990
D212	999,374	1013,326	999,787
D213	999,466	1014,188	1000,076

Punto	X	Y	Z
D214	1000,950	1007,579	1000,469
D215	1000,925	1007,210	999,558
D216	1001,323	1008,282	1000,216
D217	1001,482	1008,215	999,702
D218	1001,698	1008,999	1000,270
D219	1002,005	1008,856	999,679
D220	1001,949	1009,864	1000,360
D221	1002,269	1009,885	999,884
D222	997,046	1000,149	1000,442
D223	1002,373	1010,851	1000,262
D224	1002,516	1010,764	999,920
D225	997,148	999,806	999,918

En los siguientes croquis se puede ver la disposición de los pares en alzado. En el superior se presenta el pilar izquierdo y en el inferior el pilar derecho:
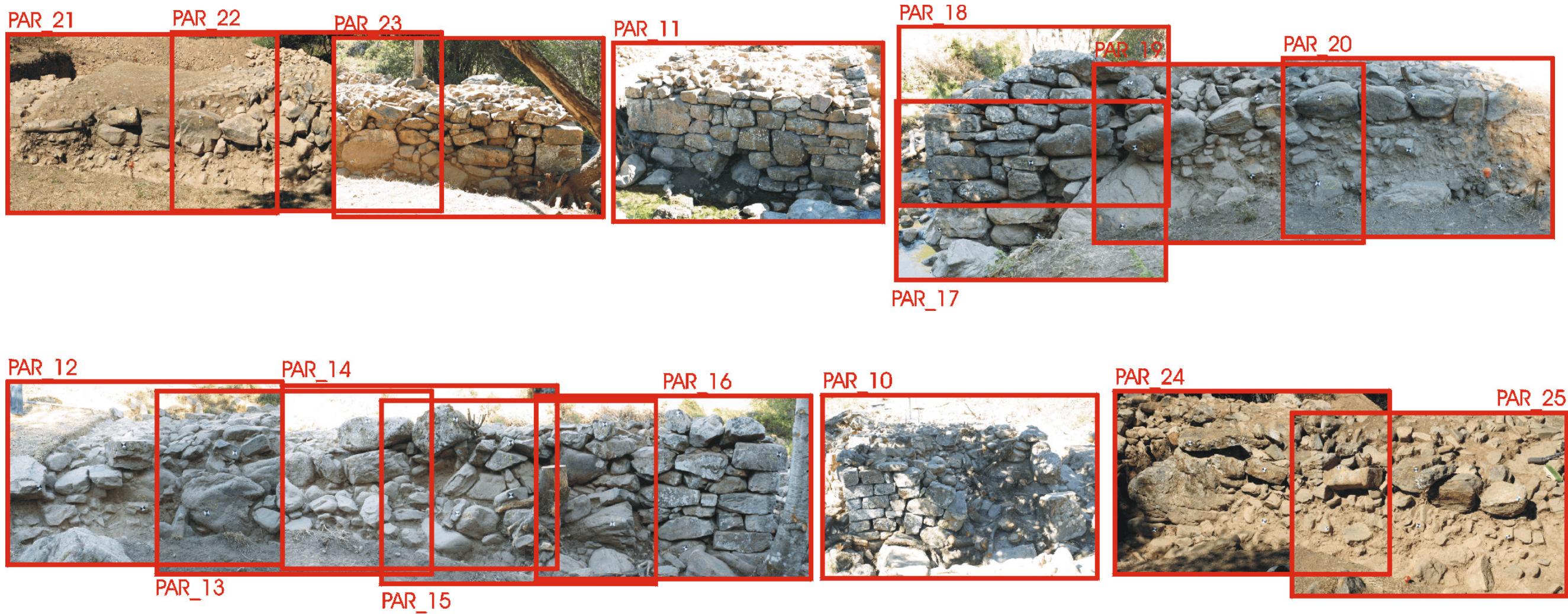
Anexo 3: Informes de restitución.

Informes de restitución

    Debido a la gran cantidad de datos recogidos (el listado consta de unas 50 páginas), se ofrece de forma impresa un ejemplo en este anexo. El documento completo puede ser examinado desde el CD. (E:\AnexoIII_Informes de restitución.doc)

RESULTADOS PAR1

```
                              Statistics Summary
                              ------------------
                          Number of Equations:   68
                          Number of Unknowns:    36
                          Degrees of Freedom:    32

                     Standard Deviation of Unit Weight: 1620.777586

            Category              VTPV Sum       Ratio       Sigma0
            a priori photo          439.751      0.000        6.054
            a priori point         3253.290      0.000       11.643
            collinearity equations 84057746.404  2.125     1620.742
```

```
                          Frame Parameters  (Unit is Meter and degrees)
          Frame   Description    Cam    X            Y            Z            Omega        Phi          Kappa
          -----  ---------------  ---  ------------ ------------ ------------ ----------- ----------- -----------
            1    PAR1I            1     992.525      999.792     1001.631      52.069284  -33.911609  118.001675
            2    PAR1D            1     992.574      999.864     1001.512      55.829511  -32.962524  122.751406
```

```
                                    Point Results for Iteration  9

                             Current Correction                    Current Position
          Point ID  Type   Description     X            Y            Z            X            Y            Z
          --------  ----  ---------------  ------------ ------------ ------------ ------------ ------------ ------------
          D102      C                       -0.079       -0.134       0.051       996.926     1004.254      999.063
          D103      C                        0.024        0.037       0.035       996.052     1004.842     1000.218
          D104      C                        0.019        0.212      -0.052       995.254     1005.380      999.149
          D105      C                        0.020       -0.005      -0.102       993.100     1000.802     1000.864
          D106      C                        0.354        0.153      -0.121       993.460     1000.886      999.985
          D109      C                       -0.261       -0.285       0.337       993.562     1000.774     1000.264
          D110      C                       -0.077        0.022      -0.147       993.734     1001.807      999.804
          rel_101   T     relativo           0.551        0.290      -0.126       994.109     1001.133      999.926
```

```
                          Frame Parameter Residuals  (Unit is Meter and degrees)
          Frame   Description    Cam    X            Y            Z            Omega        Phi          Kappa
          -----  ---------------  ---  ------------ ------------ ------------ ----------- ----------- -----------
            1    PAR1I            1       2.677        1.975        5.256      -52.069284   33.911609  -52.366657
            2    PAR1D            1       2.960        2.087        5.376      -55.829511   32.962524  -56.699190
```

```
                     Point Residuals  (Meter)                          Image Residuals
          Point ID  Type    X          Y          Z          Frame ID          Sample       Line       Image X      Image Y
          --------  ----  ---------- ---------- ----------  ------------------- ----------- ----------- ----------- -----------
          D102      C      0.023      0.085     -0.122
                                                            PAR1I               -15.94       3.55        -15.9        -3.6
                                                            PAR1D                 8.75       8.25          8.8        -8.3
          D103      C     -0.383      0.239     -0.036
                                                            PAR1I               -18.33      27.00        -18.3       -27.1
                                                            PAR1D                 7.65       2.04          7.6        -2.0
```

```
D104      C      0.457     -0.351     -0.037
                                            PAR1I              5.87      23.54       5.9     -23.6
                                            PAR1D            -10.33      11.67     -10.3     -11.7
D105      C      0.102     -0.391     -0.244
                                            PAR1I           -220.81     668.18    -220.9    -670.2
                                            PAR1D           -386.68     587.50    -386.8    -589.1
D106      C     -0.355     -0.289     -0.018
                                            PAR1I            -28.48    1157.60     -28.5   -1161.1
                                            PAR1D            -43.69    1233.39     -43.7   -1236.8
D109      C     -0.084      0.533     -0.204
                                            PAR1I            -57.66     -72.40     -57.7      72.6
                                            PAR1D            -36.37     -54.44     -36.4      54.6
D110      C      0.233      0.166      0.643
                                            PAR1I             13.79      44.20      13.8     -44.3
                                            PAR1D            -52.54      63.06     -52.6     -63.2
rel_101   T
                                            PAR1I             63.95     973.18      64.0    -976.1
                                            PAR1D             83.92     979.92      83.9    -982.6
                          Averages:      0.234      0.293      0.186
                          RMS:           0.281      0.324      0.276

              Averages:     65.92     369.37       65.9      370.4
              RMS:         117.42     590.33      117.4      592.0


                    ----- Results for Iteration 10 -----

                             Statistics Summary
                             ------------------
                         Number of Equations:    68
                         Number of Unknowns:     36
                         Degrees of Freedom:     32

                   Standard Deviation of Unit Weight: 568.282995


             Category              VTPV Sum      Ratio       Sigma0
             a priori photo         463.070      0.000        6.212
             a priori point        4552.131      0.001       13.772
             collinearity equations 10329242.803  2.124      568.145
```

```
                          Frame Parameters  (Unit is Meter and degrees)
      Frame  Description   Cam       X             Y             Z           Omega         Phi         Kappa
      -----  ------------- ---  ------------  ------------  ------------  -----------  -----------  -----------
        1   PAR1I           1      992.610      1000.310      1000.832     56.825941   -37.891030   121.585994
        2   PAR1D           1      992.627      1000.291      1000.889     59.511049   -36.136725   124.440964
```

```
                              Point Results for Iteration 10

                       Current Correction                    Current Position
      Point ID Type  Description       X             Y             Z             X             Y             Z
      -------- ---- ---------------- ------------  ------------  ------------  ------------  ------------  ------------
      D102     C                        0.051         0.148        -0.016       996.976      1004.401       999.046
      D103     C                       -0.048        -0.082        -0.084       996.004      1004.760      1000.135
      D104     C                        0.094        -0.127         0.033       995.348      1005.254       999.182
      D105     C                        0.067        -0.001        -0.247       993.167      1000.801      1000.617
      D106     C                        0.288         0.143         0.227       993.748      1001.029      1000.211
      D109     C                       -0.381        -0.023         0.096       993.181      1000.751      1000.360
      D110     C                       -0.071        -0.059        -0.006       993.663      1001.749       999.798
      rel_101  T    relativo            0.930         0.790        -0.538       995.039      1001.923       999.387
```

RESULTADOS PAR2

```
                            Statistics Summary
                            ------------------
                        Number of Equations:    75
                        Number of Unknowns:     39
                        Degrees of Freedom:     36

                   Standard Deviation of Unit Weight: 3.476370

              Category              VTPV Sum       Ratio        Sigma0
              a priori photo           0.000       0.000         0.000
              a priori point           0.000       0.000         0.000
              collinearity equations 435.065       2.083         3.476
```

```
                         Frame Parameters  (Unit is Meter and degrees)
        Frame   Description   Cam     X             Y             Z          Omega        Phi          Kappa
        -----  -------------- ---  ----------- ------------ ------------- ----------- ----------- -----------
          1   PAR2I            1      995.627      1000.086      1004.107    0.057153   -1.467735    57.440879
          3   PAR2D            1      995.732      1000.259      1004.111   -0.360593   -1.311115    57.478993
```

```
                                    Point Results for Iteration  1

                            Current Correction                         Current Position
       Point ID  Type   Description      X             Y             Z             X             Y             Z
       --------  ----  ---------------- ------------ ------------ ------------- ------------- ------------ -------------
        100       C                         0.003        0.002       -0.000        995.771       999.156      1000.577
        101       C                        -0.000       -0.002        0.000        996.264       999.889      1000.664
        102       C                        -0.002       -0.003       -0.001        996.689      1000.574      1000.647
        105       C                         0.002        0.001        0.000        996.233      1000.902      1000.733
        106       C                         0.001       -0.000        0.000        995.723      1000.197      1000.679
        107       C                         0.001        0.002       -0.000        995.193       999.502      1000.614
        108       C                        -0.001       -0.001        0.000        994.938       999.755      1000.624
        109       C                        -0.003        0.002        0.001        995.321      1000.429      1000.692
        110       C                        -0.001        0.000       -0.000        995.712      1001.165      1000.762
```

```
                         Frame Parameter Residuals  (Unit is Meter and degrees)
        Frame   Description   Cam     X             Y             Z          Omega        Phi          Kappa
        -----  -------------- ---  ----------- ------------ ------------- ----------- ----------- -----------
          1   PAR2I            1     -0.005        0.088         0.001     -0.057153    1.467735    -0.079090
          3   PAR2D            1     -0.031        0.079         0.005      0.360593    1.311115    -0.080219
```

```
                    Point Residuals  (Meter)                          Image Residuals
       Point ID  Type     X          Y          Z      Frame ID          Sample       Line       Image X     Image Y
       --------  ----  ---------- ---------- ---------- ----------------------- ---------- ---------- ---------- ----------
        100       C     -0.003     -0.002      0.000
                                                        PAR2I               0.13       0.61        0.1        -0.6
                                                        PAR2D              -0.60       0.04       -0.6        -0.0
        101       C      0.000      0.002     -0.000
                                                        PAR2I               0.06       0.75        0.1        -0.7
                                                        PAR2D               0.01       0.13        0.0        -0.1
        102       C      0.002      0.003      0.001
                                                        PAR2I               0.25       0.95        0.2        -1.0
                                                        PAR2D               0.33       0.08        0.3        -0.1
        105       C     -0.002     -0.001     -0.000
                                                        PAR2I               0.32       0.57        0.3        -0.6
```

```
                                          PAR2D                      0.79      -0.36       0.8       0.4
106      C      -0.001     0.000    -0.000
                                          PAR2I                      0.22      -0.17       0.2       0.2
                                          PAR2D                     -0.22       0.03      -0.2      -0.0
107      C      -0.001    -0.002     0.000
                                          PAR2I                     -0.24      -0.26      -0.2       0.3
                                          PAR2D                     -0.49      -0.26      -0.5       0.3
108      C       0.001     0.001    -0.000
                                          PAR2I                     -0.61      -0.84      -0.6       0.8
                                          PAR2D                     -0.29      -0.15      -0.3       0.2
109      C       0.003    -0.002    -0.001
                                          PAR2I                      0.20      -0.72       0.2       0.7
                                          PAR2D                     -0.39      -0.42      -0.4       0.4
110      C       0.001    -0.000     0.000
                                          PAR2I                      0.22      -0.59       0.2       0.6
                                          PAR2D                      0.48      -0.31       0.5       0.3
                            Averages:     0.001     0.002     0.000
                            RMS:          0.002     0.002     0.000

                  Averages:     0.33      0.40      0.3       0.4
                       RMS:     0.38      0.49      0.4       0.5


                          ----- Results for Iteration  2 -----

                                  Statistics Summary
                                  ------------------
                             Number of Equations:   75
                             Number of Unknowns:    39
                             Degrees of Freedom:    36


                    Standard Deviation of Unit Weight: 0.207573

                    Category              VTPV Sum      Ratio       Sigma0
                    a priori photo          0.221       0.890       0.136
                    a priori point          0.557       0.998       0.144
                    collinearity equations  0.773       1.039       0.147
```

```
                       Frame Parameters  (Unit is Meter and degrees)
        Frame    Description    Cam      X             Y             Z             Omega        Phi          Kappa
        -----  --------------- ---  ------------- ------------- ------------- ----------- ----------- -----------
           1   PAR2I            1      995.631      1000.083      1004.106      0.107757    -1.413298   57.451075
           3   PAR2D            1      995.735      1000.257      1004.110     -0.316439    -1.256338   57.481101
```

```
                               Point Results for Iteration  2

                             Current Correction                    Current Position
         Point ID  Type  Description       X             Y             Z             X             Y             Z
         --------  ----  ----------------  ------------- ------------- ------------- ------------- ------------- -------------
         100       C                          0.000         0.000         0.000       995.771       999.156      1000.577
         101       C                          0.000         0.000         0.000       996.264       999.889      1000.664
         102       C                         -0.000        -0.000        -0.000       996.689      1000.574      1000.647
         105       C                          0.000        -0.000         0.000       996.233      1000.902      1000.733
         106       C                          0.000        -0.000         0.000       995.723      1000.196      1000.679
         107       C                         -0.000        -0.000         0.000       995.193       999.502      1000.614
         108       C                         -0.000        -0.000        -0.000       994.938       999.754      1000.624
         109       C                         -0.000        -0.000        -0.000       995.321      1000.429      1000.692
         110       C                         -0.000         0.000        -0.000       995.712      1001.165      1000.762
```

RESULTADOS PAR3

```
----- Results for Iteration  1 -----

              Statistics Summary
              ------------------
         Number of Equations:   68
         Number of Unknowns:    36
         Degrees of Freedom:    32

       Standard Deviation of Unit Weight: 25.120515

     Category              VTPV Sum       Ratio       Sigma0
     a priori photo           0.000       0.000        0.000
     a priori point           0.000       0.000        0.000
     collinearity equations  20193.288    2.125       25.121
```

```
                 Frame Parameters   (Unit is Meter and degrees)
     Frame    Description   Cam      X            Y            Z          Omega        Phi         Kappa
     -----  ---------------  ---  ------------  ------------  ------------  ----------  ----------  ----------
       1 PAR3I               1      994.586      1000.712      1004.158     -1.495158   -4.993020   54.823254
       2 PAR3D               1      994.735      1000.910      1004.155     -1.923546   -4.458191   54.583415
```

```
                         Point Results for Iteration  1

                     Current Correction                          Current Position
     Point ID  Type  Description      X            Y            Z            X            Y            Z
     --------  ----  ---------------  -----------  -----------  -----------  -----------  -----------  -----------
     108       C                      -0.003       -0.005       -0.003       994.936      999.751      1000.621
     109       C                      -0.002       -0.002        0.005       995.322      1000.425     1000.696
     110       C                       0.001        0.002       -0.005       995.714      1001.167     1000.757
     111       C                       0.000        0.003       -0.003       995.251      1001.324     1000.712
     113       C                      -0.000       -0.000        0.002       994.454      1000.077     1000.622
     114       C                       0.007        0.002       -0.004       993.933      1000.391     1000.569
     115       C                      -0.000       -0.001        0.005       994.419      1001.030     1000.600
     116       C                      -0.002       -0.000        0.002       994.825      1001.455     1000.657
```

```
                 Frame Parameter Residuals   (Unit is Meter and degrees)
     Frame    Description   Cam      X            Y            Z          Omega        Phi         Kappa
     -----  ---------------  ---  ------------  ------------  ------------  ----------  ----------  ----------
       1 PAR3I               1      -0.096        0.302       -0.016        1.495158    4.993020    0.351039
       2 PAR3D               1      -0.123        0.267       -0.011        1.923546    4.458191    0.335806
```

```
                 Point Residuals   (Meter)                       Image Residuals
     Point ID  Type    X          Y          Z      Frame ID            Sample      Line       Image X     Image Y
     --------  ----  ---------  ---------  ---------  -----------------------  -----------  -----------  -----------  -----------
     108       C      0.003      0.005      0.003
                                                      PAR3I                    -1.03        8.24         -1.0        -8.3
                                                      PAR3D                    -1.75        7.97         -1.7        -8.0
     109       C      0.002      0.002     -0.005
                                                      PAR3I                     3.16        7.19          3.2        -7.2
                                                      PAR3D                     1.11        5.80          1.1        -5.8
     110       C     -0.001     -0.002      0.005
                                                      PAR3I                     7.81        7.53          7.8        -7.6
                                                      PAR3D                     5.53        5.50          5.5        -5.5
```

```
111      C      -0.000    -0.003     0.003
                                              PAR3I              5.82      1.90      5.8     -1.9
                                              PAR3D              3.64      1.13      3.6     -1.1
113      C       0.000     0.000    -0.002
                                              PAR3I             -3.06      1.98     -3.1     -2.0
                                              PAR3D             -3.85      2.06     -3.8     -2.1
114      C      -0.007    -0.002     0.004
                                              PAR3I             -4.96     -3.51     -5.0      3.5
                                              PAR3D             -5.22     -2.84     -5.2      2.8
115      C       0.000     0.001    -0.005
                                              PAR3I             -0.21     -4.37     -0.2      4.4
                                              PAR3D             -1.69     -4.03     -1.7      4.0
116      C       0.002     0.000    -0.002
                                              PAR3I              3.57     -3.03      3.6      3.0
                                              PAR3D              1.52     -3.54      1.5      3.5
                              Averages:       0.002     0.002     0.004
                                   RMS:       0.003     0.002     0.004


                 Averages:       3.37      4.41      3.4      4.4
                      RMS:       3.94      4.96      3.9      5.0


                      ----- Results for Iteration  2 -----

                              Statistics Summary
                              ------------------
                        Number of Equations:   68
                        Number of Unknowns:    36
                        Degrees of Freedom:    32

                  Standard Deviation of Unit Weight: 8.968986

                  Category             VTPV Sum      Ratio       Sigma0
                  a priori photo          1.259      0.003       0.324
                  a priori point          2.398      0.003       0.316
                  collinearity equations  2570.510   2.122       8.963
```

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR3I	1	994.619	1000.685	1004.142	-1.055143	-4.450754	54.850246
2	PAR3D	1	994.770	1000.882	1004.142	-1.468268	-3.887216	54.580526

Point Results for Iteration 2

			Current Correction			Current Position		
Point ID	Type	Description	X	Y	Z	X	Y	Z
108	C		0.002	0.003	-0.000	994.938	999.754	1000.621
109	C		0.001	0.000	0.001	995.323	1000.426	1000.697
110	C		0.001	-0.003	0.000	995.715	1001.164	1000.758
111	C		0.001	-0.001	0.000	995.252	1001.323	1000.713
113	C		0.001	0.001	-0.000	994.454	1000.077	1000.622
114	C		-0.002	-0.000	0.001	993.931	1000.391	1000.569
115	C		-0.002	0.000	-0.001	994.416	1001.031	1000.599
116	C		-0.001	0.000	-0.001	994.824	1001.455	1000.656

RESULTADOS PAR4

```
                    ----- Results for Iteration  1 -----

                              Statistics Summary
                              ------------------
                    Number of Equations:   75
                    Number of Unknowns:    39
                    Degrees of Freedom:    36


                 Standard Deviation of Unit Weight: 19.781037


           Category               VTPV Sum       Ratio       Sigma0
           a priori photo            0.000       0.000        0.000
           a priori point            0.000       0.000        0.000
           collinearity equations 14086.419       2.083       19.781
```

```
                  Frame Parameters  (Unit is Meter and degrees)
      Frame   Description   Cam     X             Y             Z            Omega        Phi        Kappa
      -----  -------------- --- ------------ ------------- ------------- ----------- ----------- -----------
        1    PAR4I           1      994.640       997.180      1003.929    0.253108    3.003214  143.360076
        2    PAR4D           1      994.466       997.317      1003.928   -0.080363    2.912511  143.900274


                        Point Results for Iteration  1

                       Current Correction                    Current Position
     Point ID  Type  Description      X             Y             Z             X             Y             Z
     -------- ---- ---------------- ------------- ------------- ------------- ------------- ------------- -------------
       117      C                       0.001        -0.000        -0.005       994.634       996.385      1000.508
       118      C                      -0.001        -0.003         0.006       994.056       996.802      1000.515
       119      C                       0.003        -0.000        -0.004       993.359       997.185      1000.487
       124      C                      -0.001         0.000         0.005       993.750       997.687      1000.456
       125      H                       0.006         0.003         0.003       994.352       997.258      1000.477
       126      C                      -0.004        -0.006        -0.000       995.082       996.750      1000.499
       127      C                      -0.003         0.002         0.002       995.314       997.331      1000.388
       128      C                      -0.000         0.003         0.001       994.699       997.792      1000.464
       129      C                      -0.002         0.002        -0.006       994.082       998.150      1000.481


                  Frame Parameter Residuals  (Unit is Meter and degrees)
      Frame   Description   Cam     X             Y             Z            Omega        Phi        Kappa
      -----  -------------- --- ------------ ------------- ------------- ----------- ----------- -----------
        1    PAR4I           1       0.020        -0.184         0.005   -0.253108   -3.003214    0.375603
        2    PAR4D           1      -0.002        -0.178        -0.008    0.080363   -2.912511    0.371131


                    Point Residuals  (Meter)                          Image Residuals
     Point ID  Type    X          Y          Z        Frame ID          Sample       Line       Image X      Image Y
     -------- ---- ---------- ---------- ---------- ------------------------ ---------- ---------- ---------- ----------
       117      C     -0.001      0.000      0.005
                                                    PAR4I               -1.78      -0.87        -1.8         0.9
                                                    PAR4D               -0.98      -1.38        -1.0         1.4
       118      C      0.001      0.003     -0.006
                                                    PAR4I                0.36      -0.85         0.4         0.9
                                                    PAR4D                0.27      -1.83         0.3         1.8
       119      C     -0.003      0.000      0.004
                                                    PAR4I                2.92      -2.49         2.9         2.5
                                                    PAR4D                3.09      -2.39         3.1         2.4
       124      C      0.001     -0.000     -0.005
```

```
                                            PAR4I                   2.52      -0.79       2.5        0.8
                                            PAR4D                   2.08      -0.68       2.1        0.7
125      H      -0.006    -0.003
                                            PAR4I                   0.04      -0.07       0.0        0.1
                                            PAR4D                   0.18      -0.19       0.2        0.2
126      C       0.004     0.006     0.000
                                            PAR4I                  -2.79       0.71      -2.8       -0.7
                                            PAR4D                  -2.33       0.63      -2.3       -0.6
127      C       0.003    -0.002    -0.002
                                            PAR4I                  -2.67       2.15      -2.7       -2.2
                                            PAR4D                  -2.58       1.45      -2.6       -1.5
128      C       0.000    -0.003    -0.001
                                            PAR4I                  -0.20       1.52      -0.2       -1.5
                                            PAR4D                  -0.31       1.30      -0.3       -1.3
129      C       0.002    -0.002     0.006
                                            PAR4I                   2.66       0.47       2.7       -0.5
                                            PAR4D                   2.70       0.02       2.7       -0.0
                               Averages:     0.002     0.002     0.004
                               RMS:          0.003     0.003     0.004

                   Averages:     1.69      1.10      1.7       1.1
                        RMS:     2.04      1.33      2.0       1.3


                        ----- Results for Iteration  2 -----

                                Statistics Summary
                                ------------------
                        Number of Equations:   75
                        Number of Unknowns:    39
                        Degrees of Freedom:    36


                   Standard Deviation of Unit Weight: 3.447458


             Category              VTPV Sum      Ratio        Sigma0
             a priori photo           0.443      0.006        0.192
             a priori point           2.965      0.019        0.331
             collinearity equations 424.452      2.067        3.434


                     Frame Parameters  (Unit is Meter and degrees)
       Frame    Description     Cam      X              Y              Z              Omega        Phi          Kappa
       -----  ---------------   ---  ------------   ------------   ------------   -----------  -----------  -----------
         1    PAR4I              1      994.628        997.190       1003.923       0.083826     2.822864    143.355994
         2    PAR4D              1      994.455        997.327       1003.922      -0.248059     2.733186    143.902900


                            Point Results for Iteration  2

                         Current Correction                      Current Position
       Point ID  Type  Description      X              Y              Z              X              Y              Z
       --------  ----  ---------------  ------------   ------------   ------------   ------------   ------------   ------------
       117       C                        -0.000         0.000         -0.000        994.634        996.385       1000.508
       118       C                        -0.000         0.001          0.000        994.056        996.803       1000.516
       119       C                        -0.000         0.000         -0.000        993.359        997.185       1000.487
       124       C                         0.000        -0.000         -0.000        993.750        997.687       1000.456
       125       H                        -0.000         0.000         -0.001        994.351        997.258       1000.477
       126       C                         0.001         0.000         -0.000        995.082        996.750       1000.499
       127       C                         0.001        -0.000         -0.000        995.315        997.331       1000.388
       128       C                        -0.000        -0.000         -0.000        994.699        997.792       1000.464
       129       C                        -0.001        -0.001          0.000        994.082        998.148       1000.481
```

RESULTADOS PAR5

```
                          ----- Results for Iteration  1 -----

                                   Statistics Summary
                                   ------------------
                          Number of Equations:   75
                          Number of Unknowns:    39
                          Degrees of Freedom:    36


                      Standard Deviation of Unit Weight: 3.022421

              Category            VTPV Sum       Ratio       Sigma0
              a priori photo         0.000       0.000        0.000
              a priori point         0.000       0.000        0.000
              collinearity equations 328.861     2.083        3.022

                         Frame Parameters  (Unit is Meter and degrees)
          Frame    Description    Cam     X            Y            Z          Omega        Phi         Kappa
          -----  ---------------- ---  ------------ ------------ ------------ ----------- ----------- -----------

            1  PAR5I              1     993.457      998.010      1003.900     0.360033    2.527060   142.569987
            2  PAR5D              1     993.137      998.281      1003.895    -0.524889    1.822755   141.816895


                              Point Results for Iteration  1

                        Current Correction                      Current Position
          Point ID  Type  Description      X            Y            Z            X            Y            Z
          --------  ----  ---------------- ------------ ------------ ------------ ------------ ------------ ------------
           119      C                      -0.000       -0.001        0.000       993.356      997.184      1000.491
           120      C                       0.000       -0.002       -0.000       992.971      997.448      1000.484
           121      C                       0.004       -0.001       -0.002       992.348      997.885      1000.405
           122      C                      -0.002       -0.003        0.001       992.612      998.279      1000.358
           123      C                      -0.005       -0.001        0.001       993.361      997.955      1000.467
           124      C                      -0.002       -0.001        0.001       993.749      997.686      1000.452
           129      C                      -0.004        0.002       -0.002       994.080      998.150      1000.485
           130      C                       0.007        0.004        0.002       993.621      998.468      1000.465
           131      C                       0.003        0.002       -0.000       992.988      998.895      1000.411


                         Frame Parameter Residuals  (Unit is Meter and degrees)
          Frame    Description    Cam     X            Y            Z          Omega        Phi         Kappa
          -----  ---------------- ---  ------------ ------------ ------------ ----------- ----------- -----------

            1  PAR5I              1      0.025       -0.161        0.014       -0.360033   -2.527060    0.400186
            2  PAR5D              1     -0.031       -0.118       -0.012        0.524889   -1.822755    0.412025


                    Point Residuals  (Meter)                     Image Residuals
          Point ID  Type    X          Y          Z       Frame ID            Sample       Line      Image X      Image Y
          --------  ----  ---------- ---------- ----------  -----------------  ----------  ----------  ----------  ----------
           119      C      0.000      0.001     -0.000
                                                            PAR5I               -1.97       -0.47       -2.0         0.5
                                                            PAR5D               -0.16       -1.13       -0.2         1.1
           120      C     -0.000      0.002      0.000
                                                            PAR5I               -0.94       -0.90       -0.9         0.9
                                                            PAR5D                0.65       -1.31        0.6         1.3
           121      C     -0.004      0.001      0.002
                                                            PAR5I                0.67       -1.63        0.7         1.6
                                                            PAR5D                1.46       -1.14        1.5         1.1
```

```
122       C        0.002    0.003    -0.001
                                            PAR5I              1.68     -0.67      1.7      0.7
                                            PAR5D              0.40     -0.95      0.4      0.9
123       C        0.005    0.001    -0.001
                                            PAR5I             -0.08      0.51     -0.1     -0.5
                                            PAR5D             -0.70     -0.56     -0.7      0.6
124       C        0.002    0.001    -0.001
                                            PAR5I             -1.54      0.88     -1.5     -0.9
                                            PAR5D             -1.28     -0.37     -1.3      0.4
129       C        0.004   -0.002     0.002
                                            PAR5I             -2.91      1.92     -2.9     -1.9
                                            PAR5D             -0.28      0.43     -0.3     -0.4
130       C       -0.007   -0.004    -0.002
                                            PAR5I             -0.90      1.39     -0.9     -1.4
                                            PAR5D             -0.70      0.76     -0.7     -0.8
131       C       -0.003   -0.002     0.000
                                            PAR5I              0.56      1.06      0.6     -1.1
                                            PAR5D              1.11     -0.07      1.1      0.1
                                  Averages:  0.003    0.002    0.001
                                       RMS:  0.004    0.002    0.001

                    Averages:      1.00     0.90      1.0      0.9
                         RMS:      1.22     1.01      1.2      1.0

                    ----- Results for Iteration  2 -----

                              Statistics Summary
                              ------------------
                         Number of Equations:   75
                         Number of Unknowns:    39
                         Degrees of Freedom:    36

                    Standard Deviation of Unit Weight: 0.442357

            Category             VTPV Sum      Ratio       Sigma0
            a priori photo          0.271      0.241       0.150
            a priori point          1.774      0.700       0.256
            collinearity equations  4.999      1.478       0.373

                    Frame Parameters  (Unit is Meter and degrees)
        Frame  Description     Cam     X             Y             Z           Omega        Phi         Kappa
        -----  ---------------  ---  ------------  ------------  ------------  ----------  ----------  ----------
          1    PAR5I            1    993.446       998.009       1003.896      0.376390    2.347737    142.567921
          2    PAR5D            1    993.128       998.279       1003.892     -0.489665    1.666179    141.834257

                            Point Results for Iteration  2

                        Current Correction                    Current Position
        Point ID  Type  Description      X            Y            Z            X            Y            Z
        --------  ----  ---------------- ------------ ------------ ------------ ------------ ------------ ------------
        119       C                      -0.000        0.000      -0.000       993.355      997.184      1000.491
        120       C                      -0.000        0.000      -0.000       992.971      997.449      1000.484
        121       C                       0.000        0.000      -0.000       992.348      997.885      1000.405
        122       C                       0.000       -0.000       0.000       992.612      998.279      1000.358
        123       C                      -0.000        0.000       0.000       993.360      997.955      1000.467
        124       C                       0.000       -0.000       0.000       993.749      997.686      1000.452
        129       C                       0.001        0.000      -0.000       994.081      998.150      1000.485
        130       C                       0.000       -0.000      -0.000       993.621      998.468      1000.464
        131       C                      -0.000       -0.000      -0.000       992.988      998.895      1000.410
```

RESULTADOS PAR6

```
                          ----- Results for Iteration  1 -----

                                  Statistics Summary
                                  ------------------
                          Number of Equations:   73
                          Number of Unknowns:    39
                          Degrees of Freedom:    34


                          Standard Deviation of Unit Weight: 4.914147

                     Category              VTPV Sum       Ratio        Sigma0
                     a priori photo           0.000       0.000         0.000
                     a priori point           0.000       0.000         0.000
                     collinearity equations 821.061       2.147         4.914

                          Frame Parameters  (Unit is Meter and degrees)
           Frame    Description   Cam      X             Y             Z            Omega        Phi         Kappa
           -----  ----------------  ---  ------------  ------------  ------------  -----------  -----------  -----------
             1   PAR6I             1     1000.694      1012.291      1003.904     -2.328515    -0.767979    56.772112
             2   PAR6D             1     1000.889      1012.595      1003.900     -3.411573    -0.433581    55.844528


                                  Point Results for Iteration  1

                             Current Correction                    Current Position
           Point ID  Type  Description      X             Y             Z             X             Y             Z
           --------  ----  ---------------  ------------  ------------  ------------  ------------  ------------  ------------
             201      C                     -0.001        -0.002        -0.000        1000.708      1013.375      1000.193
             202      C                     -0.003        -0.000         0.001        1000.234      1012.600      1000.261
             203      C                     -0.000         0.004        -0.001         999.797      1011.991      1000.326
             208      C                     -0.002        -0.002        -0.001        1000.316      1011.738      1000.435
             209      C                      0.003         0.004         0.000        1000.803      1012.344      1000.269
             210      C                      0.000        -0.001        -0.000        1001.319      1013.005      1000.220
             211      C                      0.001        -0.000         0.000        1001.789      1012.661      1000.216
             212      C                     -0.003        -0.003         0.001        1001.285      1011.939      1000.253
             213      C                      0.006        -0.000        -0.001        1000.839      1011.381      1000.385


                          Frame Parameter Residuals  (Unit is Meter and degrees)
           Frame    Description   Cam      X             Y             Z            Omega        Phi         Kappa
           -----  ----------------  ---  ------------  ------------  ------------  -----------  -----------  -----------
             1   PAR6I             1     -0.139         0.055        -0.006        2.328515     0.767979    -0.160439
             2   PAR6D             1     -0.209         0.034        -0.011        3.411573     0.433581    -0.211473


                     Point Residuals  (Meter)                          Image Residuals
           Point ID  Type    X          Y          Z         Frame ID             Sample       Line       Image X      Image Y
           --------  ----  ----------  ----------  ----------  ----------------------  ----------  ----------  ----------  ----------
             201      C      0.001       0.002       0.000
                                                                 PAR6I                1.28        -1.34       1.3         1.3
                                                                 PAR6D                1.54        -2.98       1.5         3.0
             202      C      0.003       0.000      -0.001
                                                                 PAR6I                0.75        -0.86       0.7         0.9
                                                                 PAR6D               -1.80        -1.61      -1.8         1.6
             203      C      0.000      -0.004       0.001
                                                                 PAR6I               -1.40         0.08      -1.4        -0.1
                                                                 PAR6D               -3.09        -0.65      -3.1         0.7
             208      C      0.002       0.002       0.001
```

```
                                              PAR6I               -2.14      0.76     -2.1     -0.8
                                              PAR6D               -3.25      1.74     -3.2     -1.7
209      C      -0.003   -0.004   -0.000
                                              PAR6I                0.40      0.00      0.4     -0.0
210      C      -0.000    0.001    0.000
                                              PAR6I                1.18     -0.83      1.2      0.8
                                              PAR6D                1.65     -0.18      1.6      0.2
211      C      -0.001    0.000   -0.000
                                              PAR6I                1.05      0.10      1.1     -0.1
                                              PAR6D                1.32      1.86      1.3     -1.9
212      C       0.003    0.003   -0.001
                                              PAR6I                0.41      0.78      0.4     -0.8
                                              PAR6D               -2.59      2.99     -2.6     -3.0
213      C      -0.006    0.000    0.001
                                              PAR6I               -1.59      1.82     -1.6     -1.8
                                              PAR6D               -3.35      4.23     -3.4     -4.2
                                Averages:      0.002     0.002    0.001
                                RMS:           0.003     0.002    0.001

                      Averages:     1.69      1.34      1.7      1.3
                      RMS:          1.91      1.76      1.9      1.8


                        ----- Results for Iteration  2 -----

                               Statistics Summary
                               ------------------
                        Number of Equations:   73
                        Number of Unknowns:    39
                        Degrees of Freedom:    34


                 Standard Deviation of Unit Weight: 0.650056


                 Category            VTPV Sum     Ratio      Sigma0
                 a priori photo         0.448     0.190      0.193
                 a priori point         1.130     0.213      0.205
                 collinearity equations 12.789    1.911      0.613

                        Frame Parameters  (Unit is Meter and degrees)
           Frame   Description   Cam     X             Y             Z            Omega        Phi         Kappa
           -----  -------------- ---  ----------- ------------- -------------  ----------- ----------- -----------
             1  PAR6I              1   1000.706     1012.281      1003.900     -2.177250   -0.577000   56.741729
             2  PAR6D              1   1000.903     1012.591      1003.892     -3.343332   -0.210660   55.804816

                                    Point Results for Iteration  2

                          Current Correction                   Current Position
           Point ID Type  Description      X            Y            Z             X             Y            Z
           -------- ---- ---------------- ------------- ------------- ------------- ------------- ------------- -------------
             201    C                       0.000        0.001        0.000        1000.708      1013.376      1000.193
             202    C                       0.000        0.001       -0.000        1000.234      1012.600      1000.261
             203    C                       0.000       -0.000       -0.000         999.797      1011.991      1000.326
             208    C                       0.001       -0.001       -0.000        1000.317      1011.738      1000.435
             209    C                       0.000       -0.000       -0.000        1000.803      1012.344      1000.269
             210    C                      -0.000       -0.000       -0.000        1001.319      1013.005      1000.220
             211    C                      -0.001       -0.001       -0.000        1001.788      1012.660      1000.216
             212    C                      -0.001       -0.000        0.000        1001.284      1011.939      1000.253
             213    C                       0.000       -0.000        0.000        1000.839      1011.381      1000.386
```

RESULTADOS PAR7

```
                              ----- Results for Iteration  1 -----

                                    Statistics Summary
                                    ------------------
                              Number of Equations:    75
                              Number of Unknowns:     39
                              Degrees of Freedom:     36


                           Standard Deviation of Unit Weight: 4.624228


                      Category           VTPV Sum        Ratio        Sigma0
                      a priori photo        0.000        0.000        0.000
                      a priori point        0.000        0.000        0.000
                      collinearity equations  769.806    2.083        4.624

                              Frame Parameters  (Unit is Meter and degrees)
            Frame    Description    Cam      X             Y             Z             Omega         Phi          Kappa
            -----    -----------    ---    ---------     ---------     ---------     ---------     ---------     ---------

              1  PAR7I              1      999.846       1011.257      1003.937      -4.231487     -0.619510     56.362881
              2  PAR7D              1      1000.002      1011.521      1003.931      -4.704424     -0.252143     55.946385


                                    Point Results for Iteration  1

                                Current Correction                      Current Position
            Point ID  Type   Description      X             Y             Z             X             Y             Z
            --------  ----   -----------    ---------     ---------     ---------     ---------     ---------     ---------
            203        C                      -0.007        -0.001        0.001         999.790       1011.986      1000.328
            204        C                       0.006        -0.003       -0.000         999.350       1011.354      1000.392
            205        C                      -0.010         0.005        0.002         998.943       1010.788      1000.510
            206        C                       0.002         0.003       -0.001         999.568       1010.387      1000.468
            207        C                       0.003        -0.005        0.001         999.876       1011.057      1000.431
            208        C                      -0.003        -0.003       -0.001         1000.315      1011.737      1000.435
            213        C                       0.005         0.001        0.001         1000.838      1011.382      1000.387
            214        C                       0.003        -0.001        0.000         1000.406      1010.831      1000.502
            215        C                       0.001         0.005       -0.002         999.928       1010.153      1000.504


                              Frame Parameter Residuals  (Unit is Meter and degrees)
            Frame    Description    Cam      X             Y             Z             Omega         Phi          Kappa
            -----    -----------    ---    ---------     ---------     ---------     ---------     ---------     ---------

              1  PAR7I              1      -0.256        0.039         -0.017        4.231487      0.619510      0.097237
              2  PAR7D              1      -0.286        0.015         -0.002        4.704424      0.252143      0.116304


                          Point Residuals  (Meter)                     Image Residuals
            Point ID  Type     X          Y          Z        Frame ID           Sample      Line      Image X     Image Y
            --------  ----   -------    -------    -------    ----------------    -------    -------    -------     -------
            203        C       0.007      0.001     -0.001
                                                             PAR7I               3.64       -3.23      3.6         3.2
                                                             PAR7D               3.15       -3.99      3.2         4.0
            204        C      -0.006      0.003      0.000
                                                             PAR7I               -0.20      -1.02      -0.2        1.0
                                                             PAR7D               -2.39      -2.92      -2.4        2.9
            205        C       0.010     -0.005     -0.002
                                                             PAR7I               -5.68      -0.26      -5.7        0.3
                                                             PAR7D               -6.07      -1.91      -6.1        1.9
            206        C      -0.002     -0.003      0.001
```

```
                                          PAR7I              -5.49    3.88    -5.5    -3.9
                                          PAR7D              -7.37    3.68    -7.4    -3.7
207        C      -0.003    0.005    -0.001
                                          PAR7I              -0.54    1.57    -0.5    -1.6
                                          PAR7D              -3.43    1.10    -3.4    -1.1
208        C       0.003    0.003     0.001
                                          PAR7I               2.96   -0.92     3.0     0.9
                                          PAR7D               3.73   -0.64     3.7     0.6
213        C      -0.005   -0.001    -0.001
                                          PAR7I               2.52    2.31     2.5    -2.3
                                          PAR7D               2.50    3.29     2.5    -3.3
214        C      -0.003    0.001    -0.000
                                          PAR7I              -1.94    3.93    -1.9    -3.9
                                          PAR7D              -2.53    5.12    -2.5    -5.1
215        C      -0.001   -0.005     0.002
                                          PAR7I              -6.44    5.61    -6.4    -5.6
                                          PAR7D              -7.23    6.07    -7.2    -6.1
                              Averages:    0.004    0.003     0.001
                              RMS:         0.005    0.003     0.001

                   Averages:    3.77    2.86     3.8     2.9
                        RMS:    4.31    3.33     4.3     3.3


                     ----- Results for Iteration  2 -----

                            Statistics Summary
                            ------------------
                     Number of Equations:   75
                     Number of Unknowns:    39
                     Degrees of Freedom:    36


            Standard Deviation of Unit Weight: 1.331109


            Category              VTPV Sum     Ratio      Sigma0
            a priori photo           1.003     0.098       0.289
            a priori point           3.601     0.157       0.365
            collinearity equations  59.184     1.933       1.282


                 Frame Parameters  (Unit is Meter and degrees)
     Frame    Description    Cam     X            Y            Z           Omega        Phi         Kappa
     -----  --------------- --- ------------ ------------ ------------ ----------- ----------- ----------
       1   PAR7I              1    999.851     1011.258     1003.923    -4.232248   -0.547731   56.321087
       2   PAR7D              1   1000.010     1011.525     1003.912    -4.771953   -0.119284   55.911125


                     Point Results for Iteration  2

                     Current Correction                    Current Position
     Point ID  Type  Description       X            Y            Z            X            Y            Z
     --------  ----  --------------- ------------ ------------ ------------ ------------ ------------ ------------
207        C                           0.000        0.001        0.000      999.791     1011.987     1000.328
```
```
203        C                           0.000        0.001        0.000      999.791     1011.987     1000.328
204        C                           0.001        0.001        0.000      999.350     1011.355     1000.392
205        C                           0.001        0.000       -0.001      998.943     1010.788     1000.509
206        C                           0.001       -0.001        0.000      999.569     1010.386     1000.468
207        C                           0.000        0.000        0.000      999.876     1011.057     1000.431
208        C                          -0.000        0.001       -0.000     1000.315     1011.737     1000.435
213        C                          -0.002       -0.000       -0.000     1000.836     1011.382     1000.387
214        C                          -0.001       -0.001        0.000     1000.406     1010.830     1000.502
215        C                           0.000       -0.001        0.000      999.928     1010.152     1000.504
```

RESULTADOS PAR8

```
                         ----- Results for Iteration  1 -----

                                 Statistics Summary
                                 ------------------
                         Number of Equations:   68
                         Number of Unknowns:    36
                         Degrees of Freedom:    32


                       Standard Deviation of Unit Weight: 5.622071


                Category              VTPV Sum        Ratio          Sigma0
                a priori photo           0.000        0.000          0.000
                a priori point           0.000        0.000          0.000
                collinearity equations 1011.446       2.125          5.622


                         Frame Parameters  (Unit is Meter and degrees)
        Frame    Description   Cam      X            Y            Z           Omega         Phi         Kappa
        -----  ---------------  ---  -----------  -----------  -----------  -----------  -----------  -----------
          1   PAR8I            1    1001.176     1010.910     1003.778     0.622305     0.743204    58.356155
          2   PAR8D            1    1001.291     1011.142     1003.790    -0.153173     0.749431    57.324632


                              Point Results for Iteration  1

                             Current Correction                    Current Position
        Point ID  Type   Description        X            Y            Z            X            Y            Z
        --------  ----  ---------------  -----------  -----------  -----------  -----------  -----------  -----------
        212        C                       -0.004        0.000       -0.000     1001.284     1011.942     1000.252
        213        C                        0.006        0.003       -0.000     1000.839     1011.384     1000.386
        214        C                        0.001        0.000       -0.001     1000.404     1010.832     1000.501
        219        C                       -0.004       -0.002        0.000     1000.808     1010.458     1000.470
        220        C                       -0.003       -0.003        0.001     1001.259     1011.148     1000.239
        221        C                        0.000       -0.000        0.000     1001.944     1011.362     1000.220
        222        C                        0.001        0.001        0.001     1001.654     1010.876     1000.263
        223        C                        0.002        0.001       -0.001     1001.261     1010.216     1000.437


                         Frame Parameter Residuals  (Unit is Meter and degrees)
        Frame    Description   Cam      X            Y            Z           Omega         Phi         Kappa
        -----  ---------------  ---  -----------  -----------  -----------  -----------  -----------  -----------
          1   PAR8I            1       0.048       -0.033       -0.009      -0.622305    -0.743204     0.178832
          2   PAR8D            1      -0.000       -0.035       -0.029       0.153173    -0.749431     0.099957


                         Point Residuals  (Meter)                        Image Residuals
        Point ID  Type      X          Y          Z        Frame ID          Sample        Line       Image X      Image Y
        --------  ----  ----------  ----------  ----------  ------------------------  ----------  ----------  ----------  ----------
        212        C        0.004      -0.000       0.000
                                                             PAR8I               -0.15       -0.04       -0.2         0.0
                                                             PAR8D                0.03       -0.92        0.0         0.9
        213        C       -0.006      -0.003       0.000
                                                             PAR8I                0.52       -0.05        0.5         0.1
                                                             PAR8D               -0.18       -0.22       -0.2         0.2
        214        C       -0.001      -0.000       0.001
                                                             PAR8I               -0.37       -0.01       -0.4         0.0
                                                             PAR8D                0.31       -0.55        0.3         0.5
        219        C        0.004       0.002      -0.000
                                                             PAR8I               -0.50       -0.28       -0.5         0.3
```

```
                                                    PAR8D               -0.04       -0.42      -0.0        0.4
220      C        0.003     0.003    -0.001
                                                    PAR8I                1.18        0.06       1.2       -0.1
                                                    PAR8D               -1.59       -0.55      -1.6        0.6
221      C       -0.000     0.000    -0.000
                                                    PAR8I                0.12       -0.53       0.1        0.5
                                                    PAR8D               -0.14        0.27      -0.1       -0.3
222      C       -0.001    -0.001    -0.001
                                                    PAR8I                0.54       -0.28       0.5        0.3
                                                    PAR8D               -0.59        0.08      -0.6       -0.1
223      C       -0.002    -0.001     0.001
                                                    PAR8I               -0.62       -0.07      -0.6        0.1
                                                    PAR8D                0.48       -0.13       0.5        0.1
                                     Averages:      0.003     0.001    0.001
                                     RMS:           0.003     0.002    0.001

                          Averages:     0.46      0.28      0.5       0.3
                               RMS:     0.61      0.37      0.6       0.4


                       ----- Results for Iteration  2 -----

                              Statistics Summary
                              ------------------
                       Number of Equations:    68
                       Number of Unknowns:     36
                       Degrees of Freedom:     32

                  Standard Deviation of Unit Weight: 0.251111

               Category            VTPV Sum      Ratio       Sigma0
               a priori photo        0.038       0.106        0.056
               a priori point        1.065       1.495        0.211
               collinearity equations 0.915       0.964        0.169
```

```
                          Frame Parameters  (Unit is Meter and degrees)
      Frame  Description   Cam      X             Y             Z         Omega        Phi         Kappa
      -----  -----------   ---  -------------  -------------  -------------  -----------  -----------  -----------
        1   PAR8I          1     1001.177      1010.911      1003.778      0.606455     0.761110    58.353613
        2   PAR8D          1     1001.293      1011.145      1003.790     -0.188437     0.781733    57.327517
```

```
                              Point Results for Iteration  2

                        Current Correction                    Current Position
       Point ID Type  Description       X             Y             Z             X             Y             Z
       -------- ----  ---------------- -------------  ------------  ------------  ------------  ------------  ------------
       212      C                       -0.000        -0.000        -0.000       1001.284      1011.942      1000.252
       213      C                        0.000         0.000        -0.000       1000.839      1011.384      1000.386
       214      C                       -0.000         0.000        -0.000       1000.404      1010.832      1000.501
       219      C                        0.000         0.000         0.000       1000.808      1010.458      1000.471
       220      C                       -0.000        -0.000         0.000       1001.259      1011.148      1000.239
       221      C                       -0.000        -0.000        -0.000       1001.944      1011.362      1000.220
       222      C                        0.000        -0.000         0.000       1001.654      1010.876      1000.263
       223      C                        0.000        -0.000        -0.000       1001.261      1010.216      1000.437
```

RESULTADOS PAR9

```
                            ----- Results for Iteration  1 -----

                                    Statistics Summary
                                    ------------------
                            Number of Equations:   75
                            Number of Unknowns:    39
                            Degrees of Freedom:    36


                        Standard Deviation of Unit Weight: 18.136314

                 Category              VTPV Sum      Ratio        Sigma0
                 a priori photo          0.000       0.000        0.000
                 a priori point          0.000       0.000        0.000
                 collinearity equations 11841.332    2.083       18.136

                            Frame Parameters  (Unit is Meter and degrees)
             Frame   Description   Cam      X             Y             Z           Omega        Phi         Kappa
             -----  ------------   ---  ------------  ------------  ------------  -----------  -----------  -----------
              1  PAR9I              1     1000.345      1009.793      1003.916     -1.367754     1.864650    52.589880
              2  PAR9D              1     1000.556      1010.070      1003.909     -1.994133     2.269291    53.220413


                                  Point Results for Iteration  1

                            Current Correction                   Current Position
            Point ID  Type  Description       X             Y             Z             X             Y             Z
            --------  ----  ------------  ------------  ------------  ------------  ------------  ------------  ------------
             214       C                      0.003         0.001        -0.005      1000.406      1010.833      1000.497
             215       C                     -0.003         0.002         0.002       999.924      1010.150      1000.508
             216       C                      0.007        -0.002        -0.004       999.576      1009.706      1000.500
             217       C                      0.002         0.001         0.002      1000.032      1009.424      1000.542
             218       C                     -0.003         0.002         0.007      1000.291      1009.884      1000.531
             219       C                     -0.004         0.001         0.002      1000.808      1010.461      1000.472
             223       C                      0.002         0.001        -0.001      1001.261      1010.216      1000.437
             224       C                     -0.002        -0.002         0.003      1000.832      1009.482      1000.462
             225       C                     -0.002        -0.004        -0.006      1000.561      1009.085      1000.518


                            Frame Parameter Residuals  (Unit is Meter and degrees)
             Frame   Description   Cam      X             Y             Z           Omega        Phi         Kappa
             -----  ------------   ---  ------------  ------------  ------------  -----------  -----------  -----------
              1  PAR9I              1       -0.081        -0.111        -0.008      1.367754     -1.864650    -0.269695
              2  PAR9D              1       -0.121        -0.135         0.003      1.994133     -2.269291    -0.270152


                        Point Residuals  (Meter)                        Image Residuals
            Point ID  Type    X          Y          Z        Frame ID          Sample       Line       Image X      Image Y
            --------  ----  ---------  ---------  ---------  -----------------------  ----------  ----------  ----------  ----------
             214       C    -0.003     -0.001      0.005
                                                            PAR9I              1.36       -0.03        1.4        0.0
                                                            PAR9D              2.71       -0.43        2.7        0.4
             215       C     0.003     -0.002     -0.002
                                                            PAR9I              0.12       -0.88        0.1        0.9
                                                            PAR9D             -0.10       -1.11       -0.1        1.1
             216       C    -0.007      0.002      0.004
                                                            PAR9I             -1.34       -1.01       -1.3        1.0
                                                            PAR9D             -2.25       -1.99       -2.3        2.0
             217       C    -0.002     -0.001     -0.002
```

```
                                                    PAR9I                  -1.14     -0.28      -1.1       0.3
                                                    PAR9D                  -2.35     -1.16      -2.4       1.2
218      C      0.003    -0.002    -0.007
                                                    PAR9I                   0.34      0.07       0.3      -0.1
                                                    PAR9D                  -0.13     -0.37      -0.1       0.4
219      C      0.004    -0.001    -0.002
                                                    PAR9I                   1.64      0.37       1.6      -0.4
                                                    PAR9D                   2.52      1.07       2.5      -1.1
223      C     -0.002    -0.001     0.001
                                                    PAR9I                   1.26      1.34       1.3      -1.3
                                                    PAR9D                   2.21      1.37       2.2      -1.4
224      C      0.002     0.002    -0.003
                                                    PAR9I                   0.00      0.59       0.0      -0.6
                                                    PAR9D                  -0.64      1.25      -0.6      -1.3
225      C      0.002     0.004     0.006
                                                    PAR9I                  -1.90      0.24      -1.9      -0.2
                                                    PAR9D                  -3.12      0.37      -3.1      -0.4
                                Averages:   0.003     0.002     0.004
                                RMS:        0.003     0.002     0.004

                      Averages:     1.40      0.78       1.4       0.8
                           RMS:     1.71      0.94       1.7       0.9


                       ----- Results for Iteration  2 -----

                                Statistics Summary
                                ------------------
                       Number of Equations:    75
                       Number of Unknowns:     39
                       Degrees of Freedom:     36

                   Standard Deviation of Unit Weight: 2.765797

                 Category              VTPV Sum       Ratio       Sigma0
                 a priori photo           0.353       0.008        0.172
                 a priori point           2.754       0.028        0.319
                 collinearity equations 272.279       2.060        2.750

                       Frame Parameters  (Unit is Meter and degrees)
            Frame    Description     Cam     X             Y             Z           Omega        Phi         Kappa
            -----  ---------------   ---  -----------   -----------   -----------   ----------  ----------  ----------
              1  PAR9I                1    1000.331      1009.777      1003.910     -1.108468    1.639566    52.603662
              2  PAR9D                1    1000.542      1010.053      1003.902     -1.722452    2.046991    53.249827

                                   Point Results for Iteration  2

                            Current Correction                        Current Position
            Point ID  Type  Description     X             Y             Z             X             Y             Z
            --------  ----  ------------  -----------   -----------   -----------   -----------   -----------   -----------
            214       C                    -0.000         0.000         0.000       1000.406      1010.833      1000.498
            215       C                     0.000        -0.001         0.000        999.924      1010.149      1000.509
            216       C                     0.001        -0.001        -0.000        999.576      1009.705      1000.500
            217       C                    -0.000        -0.000        -0.000       1000.031      1009.424      1000.542
            218       C                    -0.000        -0.000        -0.000       1000.291      1009.883      1000.530
            219       C                     0.000         0.000        -0.000       1000.809      1010.461      1000.472
            223       C                     0.001         0.001        -0.000       1001.262      1010.217      1000.437
            224       C                    -0.000         0.000        -0.000       1000.832      1009.483      1000.462
            225       C                    -0.001         0.001         0.001       1000.560      1009.085      1000.518
```

RESULTADOS PAR10

```
                              ----- Results for Iteration  3 -----

                                       Statistics Summary
                                       ------------------
                              Number of Equations:   54
                              Number of Unknowns:    30
                              Degrees of Freedom:    24


                        Standard Deviation of Unit Weight: 62.625855


                 Category                VTPV Sum      Ratio        Sigma0
                 a priori photo            13.228      0.001        1.050
                 a priori point            82.321      0.003        2.139
                 collinearity equations  94032.395     2.248       62.594

                           Frame Parameters  (Unit is Meter and degrees)
            Frame    Description    Cam    X            Y            Z            Omega       Phi         Kappa
            -----   ---------------  ---  ------------ ------------ ------------ ----------- ----------- -----------
              1 PAR10I               1      3.032        3.277        6.429    -18.621938    9.825242    3.222349
              2 PAR10D               1      0.992        3.118        6.307    -17.934419   -6.364273   -1.877551


                                    Point Results for Iteration  3

                                 Current Correction                         Current Position
            Point ID  Type  Description       X            Y            Z            X            Y            Z
            --------  ----  ---------------- ------------ ------------ ------------ ------------ ------------ ------------
            15        C                       -0.018        0.040       -0.010        3.473        1.466       -1.633
            16        C                       -0.016       -0.038        0.015        3.716        0.257       -0.005
            17        C                        0.004       -0.008       -0.035        0.994        1.250       -0.023
            18        C                        0.020       -0.011        0.031        1.425        0.154        0.019
            19        C                       -0.007        0.013       -0.019        0.024        1.431       -0.214
            20        C                        0.018        0.005        0.018        0.064        0.382       -0.106


                           Frame Parameter Residuals  (Unit is Meter and degrees)
            Frame    Description    Cam    X            Y            Z            Omega       Phi         Kappa
            -----   ---------------  ---  ------------ ------------ ------------ ----------- ----------- -----------
              1 PAR10I               1     -2.291       -1.236       -0.061     18.621938   -9.825242   -2.791027
              2 PAR10D               1     -2.153        0.891        0.122     17.934419    6.364273   -1.997610


                    Point Residuals  (Meter)                        Image Residuals
            Point ID  Type    X          Y          Z       Frame ID             Sample      Line     Image X    Image Y
            --------  ----  ---------- ---------- ----------  ------------------------ ---------- ---------- ---------- ----------
            15        C     -0.001     -0.002      0.001
                                                             PAR10I                   2.81        6.45        2.8       -6.5
                                                             PAR10D                   6.99        5.73        7.0       -5.7
            16        C      0.002     -0.001      0.001
                                                             PAR10I                   4.29       11.10        4.3      -11.1
                                                             PAR10D                   8.47       10.54        8.5      -10.6
            17        C     -0.001      0.001     -0.005
                                                             PAR10I                  -1.14        7.74       -1.1       -7.8
                                                             PAR10D                   5.51        7.57        5.5       -7.6
            18        C      0.002      0.003     -0.002
                                                             PAR10I                   1.38       12.30        1.4      -12.3
```

```
                                        PAR10D               6.93      11.74       6.9     -11.8
19       C      -0.003   -0.000    0.004
                                        PAR10I              -2.76       7.00      -2.8      -7.0
                                        PAR10D               3.21       7.66       3.2      -7.7
20       C       0.001   -0.001    0.000
                                        PAR10I              -0.87      10.51      -0.9     -10.5
                                        PAR10D               5.00      12.00       5.0     -12.0
                              Averages:  0.002    0.001    0.002
                              RMS:       0.002    0.002    0.003


                    Averages:    4.11     9.20     4.1      9.2
                         RMS:    4.76     9.47     4.8      9.5



                     ----- Results for Iteration  4 -----

                             Statistics Summary
                             ------------------
                          Number of Equations:   54
                          Number of Unknowns:     30
                          Degrees of Freedom:     24


                 Standard Deviation of Unit Weight: 15.022282

               Category            VTPV Sum      Ratio        Sigma0
               a priori photo         9.531      0.008        0.891
               a priori point         0.924      0.001        0.227
               collinearity equations 5405.600   2.246       15.008


                   Frame Parameters  (Unit is Meter and degrees)
        Frame    Description    Cam     X            Y            Z            Omega        Phi         Kappa
        -----    -----------    ---  ----------   ----------   ----------   ----------  ----------   ----------
          1   PAR10I            1     3.012        3.302        6.403      -18.769528    9.712863     3.241456
          2   PAR10D            1     0.971        3.141        6.276      -18.077085   -6.469316    -1.854227


                        Point Results for Iteration  4
```

```
                    Current Correction                     Current Position
    Point ID  Type   Description        X            Y            Z            X            Y            Z
    --------  ----   ---------------  ----------   ----------   ----------   ----------   ----------   ----------
    15        C                       -0.000       -0.001        0.001        3.473        1.465       -1.632
    16        C                       -0.000       -0.000       -0.001        3.715        0.257       -0.006
    17        C                       -0.001        0.003        0.000        0.993        1.253       -0.022
    18        C                        0.001       -0.002        0.000        1.426        0.152        0.019
    19        C                       -0.001        0.001       -0.001        0.023        1.433       -0.215
    20        C                        0.002       -0.002        0.000        0.066        0.380       -0.106
```

RESULTADOS PAR11

```
                              ----- Results for Iteration  3 -----

                                      Statistics Summary
                                      ------------------
                            Number of Equations:   68
                            Number of Unknowns:    36
                            Degrees of Freedom:    32


                          Standard Deviation of Unit Weight: 5.596048

                       Category            VTPV Sum       Ratio         Sigma0
                       a priori photo        83.441       0.472         2.637
                       a priori point        14.038       0.040         0.765
                       collinearity equations 904.625     1.918         5.317


                          Frame Parameters  (Unit is Meter and degrees)
             Frame    Description    Cam       X              Y             Z          Omega         Phi          Kappa
             -----  ----------------  ---  -------------  -------------  -------------  -----------  -----------  -----------
               1    PAR11I            1        1.411          3.066          6.392      -18.967179    -3.756448    -1.010674
               2    PAR11D            1        3.736          2.946          5.966      -18.030170    14.392541     4.708010


                                      Point Results for Iteration  3

                               Current Correction                       Current Position
             Point ID  Type   Description     X             Y             Z             X             Y             Z
             --------  ----  ---------------- -------------  -------------  -------------  -------------  -------------  -------------
             21         C                     -0.001         -0.001         -0.002         0.108          1.537         -0.039
             22         C                     -0.004         -0.002          0.003         0.518          0.477          0.015
             23         C                      0.011         -0.002         -0.002         2.440          1.548          0.025
             24         C                     -0.000          0.001         -0.001         2.349          0.135          0.052
             25         C                     -0.000          0.000          0.003         3.825          1.375          0.003
             26         C                     -0.005          0.004         -0.002         3.762          0.307         -0.020
             REL1       T     RELATIVO         0.021         -0.050         -0.133         1.580          1.610         -0.011
             REL2       T     RELATIVO         0.000          0.000         -0.015         1.566          0.355          0.143


                          Frame Parameter Residuals  (Unit is Meter and degrees)
             Frame    Description    Cam       X              Y             Z          Omega         Phi          Kappa
             -----  ----------------  ---  -------------  -------------  -------------  -----------  -----------  -----------
               1    PAR11I            1       -2.215          0.470          0.540      18.967179     3.756448     0.073301
               2    PAR11D            1       -1.955         -1.687          0.794      18.030170    -14.392541    0.011961


                          Point Residuals  (Meter)                         Image Residuals
             Point ID  Type     X          Y          Z        Frame ID            Sample       Line       Image X    Image Y
             --------  ----  ----------  ----------  ----------  -----------------------  ----------  ----------  ----------  ----------
             21         C      0.001       0.001       -0.002
                                                                PAR11I              0.00        -2.14       0.0         2.1
                                                                PAR11D             -4.42        -3.43      -4.4         3.4
             22         C     -0.001       -0.002       0.003
                                                                PAR11I             -2.57        -0.75      -2.6         0.7
                                                                PAR11D              0.80        -3.21       0.8         3.2
             23         C      0.003       -0.000      -0.001
                                                                PAR11I              1.77        -3.31       1.8         3.3
                                                                PAR11D             -1.48        -2.59      -1.5         2.6
             24         C     -0.002        0.001       0.001
                                                                PAR11I             -0.86        -0.28      -0.9         0.3
```

```
                                          PAR11D              1.69    -1.19     1.7      1.2
25       C      -0.000    0.002   -0.001
                                          PAR11I              2.52    -2.51     2.5      2.5
                                          PAR11D              2.76    -1.55     2.8      1.6
26       C      -0.000   -0.000    0.001
                                          PAR11I              0.41    -0.92     0.4      0.9
                                          PAR11D              2.90    -1.18     2.9      1.2
REL1     T
                                          PAR11I             -2.37    -2.71    -2.4      2.7
                                          PAR11D             -2.31    -2.88    -2.3      2.9
REL2     T
                                          PAR11I             -0.09    -1.41    -0.1      1.4
                                          PAR11D             -1.72    -1.06    -1.7      1.1
                              Averages:    0.001    0.001    0.001
                                  RMS:     0.002    0.001    0.002

                    Averages:     1.79     1.94     1.8      1.9
                        RMS:      2.12     2.18     2.1      2.2


                     ----- Results for Iteration  4 -----

                          Statistics Summary
                          ------------------
                     Number of Equations:   68
                     Number of Unknowns:    36
                     Degrees of Freedom:    32

                 Standard Deviation of Unit Weight: 1.812165

               Category            VTPV Sum      Ratio        Sigma0
               a priori photo        87.101      4.697        2.694
               a priori point         1.520      0.041        0.252
               collinearity equations 16.464     0.333        0.717

                        Frame Parameters  (Unit is Meter and degrees)
        Frame   Description    Cam     X            Y            Z          Omega        Phi          Kappa
        -----   ------------   ---   ----------   ----------   ----------   ----------   ----------   ----------
          1 PAR11I              1     1.403        2.991        6.410      -18.338440    -3.824355    -0.997899
          2 PAR11D              1     3.753        2.962        5.937      -18.287289    14.580679     4.727252

                            Point Results for Iteration  4

                        Current Correction                    Current Position
           Point ID Type  Description    X            Y            Z            X            Y            Z
           -------- ----  ------------   ----------   ----------   ----------   ----------   ----------   ----------
21         C                            -0.000       -0.001       -0.000        0.107        1.537       -0.039
22         C                            -0.000        0.000        0.001        0.518        0.477        0.016
23         C                             0.001       -0.001       -0.000        2.442        1.548        0.025
24         C                            -0.001        0.000       -0.000        2.348        0.136        0.052
25         C                             0.001        0.000        0.001        3.826        1.375        0.004
26         C                            -0.001        0.001       -0.000        3.762        0.308       -0.020
REL1       T    RELATIVO                -0.003       -0.003       -0.009        1.577        1.607       -0.019
REL2       T    RELATIVO                -0.000        0.001        0.003        1.566        0.357        0.146
```

RESULTADOS PAR12

```
                              ----- Results for Iteration  3 -----

                                      Statistics Summary
                                      ------------------
                             Number of Equations:    47
                             Number of Unknowns:     27
                             Degrees of Freedom:     20


                         Standard Deviation of Unit Weight: 74.709387

                        Category            VTPV Sum      Ratio       Sigma0
                        a priori photo         7.331      0.000       0.782
                        a priori point        32.515      0.001       1.472
                        collinearity equations 111590.005 2.349      74.696

                            Frame Parameters  (Unit is Meter and degrees)
               Frame   Description    Cam     X             Y             Z            Omega        Phi          Kappa
               -----  ---------------  ---  ------------- ------------- ------------- ----------- ----------- -----------
                1  PAR12I              1       0.614         2.249         3.041     -13.492755   -7.037101   -2.220967
                2  PAR12D              1       1.325         2.373         3.200     -14.614766    1.724223    0.113534


                                     Point Results for Iteration  3

                                 Current Correction                    Current Position
               Point ID  Type  Description      X             Y             Z             X             Y             Z
               --------  ----  ---------------  ------------- ------------- ------------- ------------- ------------- -------------
               57        C                        0.011        -0.008         0.019         2.107         1.549        -0.720
               58        C                       -0.009         0.011        -0.029         1.921         1.190        -0.041
               59        C                       -0.016         0.013         0.015         1.052         1.691        -0.312
               60        C                        0.014        -0.023        -0.010         1.201         1.124        -0.351
               61        C                        0.001         0.007         0.005         0.397         1.401        -0.045


                           Frame Parameter Residuals   (Unit is Meter and degrees)
               Frame   Description    Cam     X             Y             Z            Omega        Phi          Kappa
               -----  ---------------  ---  ------------- ------------- ------------- ----------- ----------- -----------
                1  PAR12I              1      -0.802         0.470         0.033      13.492755    7.037101   -1.701040
                2  PAR12D              1      -0.918        -0.077        -0.138      14.614766   -1.724223   -2.269646


                         Point Residuals  (Meter)                       Image Residuals
          Point ID  Type    X          Y          Z         Frame ID           Sample       Line      Image X     Image Y
          --------  ----  ---------- ---------- ----------  ------------------------  ----------  ----------  ----------  ----------
          57        C      -0.005      0.003     -0.002
                                                           PAR12I              -5.76      -13.07       -5.8        13.1
                                                           PAR12D              -4.48       -8.69       -4.5         8.7
          58        C      -0.002      0.000      0.002
                                                           PAR12I              -0.38       -8.60       -0.4         8.6
                                                           PAR12D               0.08       -2.87        0.1         2.9
          59        C       0.004      0.001     -0.006
                                                           PAR12I             -14.47      -15.11      -14.5        15.2
                                                           PAR12D             -11.33       -9.63      -11.3         9.7
          60        C       0.006     -0.008      0.006
                                                           PAR12I              -7.35       -9.89       -7.4         9.9
                                                           PAR12D              -6.37       -4.48       -6.4         4.5
          61        C      -0.004      0.004     -0.001
                                                           PAR12I             -18.53      -15.00      -18.5        15.0
```

```
                             PAR12D              -14.75      -8.63       -14.8        8.7
                   Averages:      0.004    0.003    0.003
                   RMS:           0.004    0.004    0.004


         Averages:      8.35     9.60     8.4      9.6
              RMS:     10.23    10.33    10.2     10.4


                ----- Results for Iteration  4 -----

                        Statistics Summary
                        ------------------
                     Number of Equations:   47
                     Number of Unknowns:    27
                     Degrees of Freedom:    20

                Standard Deviation of Unit Weight: 20.579568

              Category          VTPV Sum     Ratio       Sigma0
              a priori photo       11.489     0.005       0.978
              a priori point        2.762     0.001       0.429
              collinearity equations  8456.121   2.346      20.562

                   Frame Parameters  (Unit is Meter and degrees)
         Frame   Description   Cam     X             Y             Z            Omega        Phi          Kappa
         -----   -----------   ---  ------------  ------------  ------------  -----------  -----------  -----------
           1     PAR12I         1      0.637         2.221         3.033      -13.234033   -6.836778    -2.269954
           2     PAR12D         1      1.340         2.346         3.187      -14.337493    1.879858     0.051561

                        Point Results for Iteration  4

                           Current Correction                 Current Position
         Point ID  Type  Description      X            Y             Z            X            Y            Z
         --------  ----  ------------  ------------  ------------  ------------  ------------  ------------  ------------
         57        C                     -0.003        0.001        -0.001        2.104        1.550        -0.721
         58        C                      0.002       -0.003         0.002        1.923        1.187        -0.039
         59        C                     -0.001       -0.000        -0.002        1.051        1.691        -0.314
         60        C                      0.001        0.001         0.002        1.202        1.125        -0.349
         61        C                      0.000        0.000        -0.001        0.397        1.401        -0.046
```

RESULTADOS PAR13

```
----- Results for Iteration  2 -----

              Statistics Summary
              ------------------
       Number of Equations:   54
       Number of Unknowns:    30
       Degrees of Freedom:    24

       Standard Deviation of Unit Weight: 222.283248

       Category              VTPV Sum      Ratio      Sigma0
       a priori photo          11.967      0.000       0.999
       a priori point          24.099      0.000       1.157
       collinearity equations 1185800.153  2.250     222.280
```

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR13I	1	1.939	2.446	3.244	-16.554532	-9.711795	-3.306711
2	PAR13D	1	2.445	2.395	3.356	-15.136589	-2.878389	0.322972

Point Results for Iteration 2

			Current Correction			Current Position		
Point ID	Type	Description	X	Y	Z	X	Y	Z
53	C		0.000	0.016	-0.027	3.340	1.862	-0.589
54	C		-0.012	-0.009	0.023	3.477	1.132	-0.012
55	C		-0.002	0.007	-0.015	2.588	1.551	-0.459
56	C		-0.004	-0.011	-0.004	2.692	1.136	0.090
57	C		0.015	0.004	0.026	2.103	1.556	-0.716
58	C		0.002	-0.007	-0.003	1.920	1.186	-0.045

Frame Parameter Residuals (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR13I	1	-1.042	0.648	-0.176	16.554532	9.711795	2.400835
2	PAR13D	1	-0.976	0.191	-0.279	15.136589	2.878389	1.550438

Point Residuals (Meter) / Image Residuals

Point ID	Type	X	Y	Z	Frame ID	Sample	Line	Image X	Image Y
53	C	0.002	-0.002	0.004					
					PAR13I	-5.65	-7.54	-5.7	7.6
					PAR13D	-0.15	-2.93	-0.1	2.9
54	C	0.001	0.003	-0.000					
					PAR13I	-6.82	-8.25	-6.8	8.3
					PAR13D	-0.54	-4.25	-0.5	4.3
55	C	0.000	-0.003	-0.001					
					PAR13I	-10.30	-9.40	-10.3	9.4
					PAR13D	-1.66	-2.38	-1.7	2.4
56	C	-0.002	0.002	-0.003					
					PAR13I	-10.88	-8.56	-10.9	8.6
					PAR13D	-1.58	-2.67	-1.6	2.7
57	C	-0.001	-0.004	-0.006					

```
                                           PAR13I                 -15.41    -11.33    -15.4     11.4
                                           PAR13D                 -3.40     -5.42     -3.4      5.4
58          C       -0.001    0.004    0.006
                                           PAR13I                 -17.05    -10.61    -17.0     10.6
                                           PAR13D                 -3.01     -4.05     -3.0      4.1
                              Averages:    0.001    0.003    0.003
                              RMS:         0.001    0.003    0.004

                   Averages:    6.37     6.45     6.4      6.5
                        RMS:    8.45     7.15     8.5      7.2


                       ----- Results for Iteration  3 -----

                                Statistics Summary
                                ------------------
                         Number of Equations:   54
                         Number of Unknowns:    30
                         Degrees of Freedom:    24

                   Standard Deviation of Unit Weight: 15.671168

              Category            VTPV Sum      Ratio      Sigma0
              a priori photo        16.551      0.013      1.174
              a priori point         1.653      0.001      0.303
              collinearity equations 5875.848   2.243     15.647

                       Frame Parameters  (Unit is Meter and degrees)
         Frame    Description    Cam     X             Y             Z           Omega         Phi         Kappa
         -----  ---------------- ---  ------------  ------------  ------------  -----------  -----------  -----------
           1    PAR13I            1      1.938        2.450         3.227      -16.815817   -9.892829    -3.219788
           2    PAR13D            1      2.446        2.425         3.348      -15.639185   -2.884782     0.311667

                            Point Results for Iteration  3

                         Current Correction                   Current Position
         Point ID Type  Description     X             Y             Z             X            Y            Z
         -------- ----  --------------- ------------  ------------  ------------  ------------ ------------ ------------
         53       C                     -0.000       -0.002         0.004         3.340        1.860       -0.585
         54       C                      0.002        0.001        -0.002         3.479        1.133       -0.014
         55       C                      0.000       -0.001         0.001         2.588        1.550       -0.458
         56       C                      0.001        0.001        -0.002         2.692        1.137        0.088
         57       C                     -0.001       -0.002        -0.003         2.101        1.554       -0.719
         58       C                     -0.001        0.003         0.001         1.919        1.188       -0.044
```

RESULTADOS PAR14

```
----- Results for Iteration  1 -----

               Statistics Summary
               ------------------

        Number of Equations:   54
        Number of Unknowns:    30
        Degrees of Freedom:    24


     Standard Deviation of Unit Weight: 78.585197


        Category            VTPV Sum        Ratio       Sigma0
        a priori photo         0.000        0.000        0.000
        a priori point         0.000        0.000        0.000
        collinearity equations 148215.195   2.250       78.585
```

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR14I	1	3.401	1.881	3.402	-6.784340	-6.326838	-1.363891
2	PAR14D	1	3.665	1.733	3.265	-5.262239	-1.929934	-0.626480

Point Results for Iteration 1

| | | | Current Correction | | | Current Position | | |
Point ID	Type	Description	X	Y	Z	X	Y	Z
49	C		-0.003	0.001	0.005	4.594	1.688	-0.496
50	C		-0.001	-0.000	-0.005	4.634	1.270	-0.173
51	C		0.003	0.001	-0.003	4.109	1.882	-0.509
52	C		-0.001	-0.001	0.001	4.218	1.119	-0.091
53	C		0.000	0.003	-0.002	3.342	1.863	-0.587
54	C		0.003	-0.004	0.003	3.481	1.131	-0.009

Frame Parameter Residuals (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR14I	1	-0.404	0.400	-0.101	6.784340	6.326838	-0.896702
2	PAR14D	1	-0.294	0.115	-0.089	5.262239	1.929934	-0.929416

Point Residuals (Meter) / Image Residuals

Point ID	Type	X	Y	Z	Frame ID	Sample	Line	Image X	Image Y
49	C	0.003	-0.001	-0.005					
					PAR14I	25.51	9.83	25.5	-9.9
					PAR14D	6.02	7.10	6.0	-7.1
50	C	0.001	0.000	0.005					
					PAR14I	40.61	20.86	40.6	-20.9
					PAR14D	8.98	15.15	9.0	-15.2
51	C	-0.003	-0.001	0.003					
					PAR14I	17.98	6.95	18.0	-7.0
					PAR14D	2.29	6.28	2.3	-6.3
52	C	0.001	0.001	-0.001					
					PAR14I	37.21	25.25	37.2	-25.3
					PAR14D	8.60	15.66	8.6	-15.7
53	C	-0.000	-0.003	0.002					

```
                                                PAR14I               1.41       8.12        1.4       -8.1
                                                PAR14D              -0.31       7.00       -0.3       -7.0
54          C        -0.003    0.004    -0.003
                                                PAR14I              21.62      28.19       21.6      -28.3
                                                PAR14D               5.13      15.36        5.1      -15.4
                                    Averages:    0.002    0.002     0.003
                                    RMS:         0.002    0.002     0.003

                        Averages:   14.64    13.81    14.6      13.8
                             RMS:   19.79    15.62    19.8      15.7


                        ----- Results for Iteration   2 -----

                                    Statistics Summary
                                    ------------------
                            Number of Equations:    54
                            Number of Unknowns:     30
                            Degrees of Freedom:     24

                        Standard Deviation of Unit Weight: 35.645365

                Category              VTPV Sum       Ratio        Sigma0
                a priori photo           2.954       0.000         0.496
                a priori point           1.263       0.000         0.265
                collinearity equations 30489.993     2.250        35.643

                        Frame Parameters  (Unit is Meter and degrees)
        Frame    Description   Cam    X             Y             Z            Omega        Phi          Kappa
        -----    -----------   ---    ----------    ----------    ----------   ----------   ----------   ----------
          1  PAR14I            1      3.312         1.895         3.317        -6.926444    -7.564696    -1.482153
          2  PAR14D            1      3.643         1.788         3.250        -6.009246    -2.231274    -0.676719

                            Point Results for Iteration   2
```

			Current Correction			Current Position		
Point ID	Type	Description	X	Y	Z	X	Y	Z
49	C		0.002	-0.000	-0.007	4.596	1.687	-0.503
50	C		-0.000	-0.000	0.007	4.634	1.270	-0.166
51	C		-0.002	-0.000	0.004	4.106	1.882	-0.505
52	C		0.002	-0.000	-0.003	4.220	1.118	-0.094
53	C		0.000	-0.001	0.002	3.342	1.862	-0.585
54	C		-0.001	0.002	-0.002	3.480	1.134	-0.011

RESULTADOS PAR15

```
----- Results for Iteration  2 -----

              Statistics Summary
              ------------------
        Number of Equations:   54
        Number of Unknowns:    30
        Degrees of Freedom:    24


      Standard Deviation of Unit Weight: 33.337220


        Category              VTPV Sum      Ratio        Sigma0
        a priori photo           3.586      0.001        0.547
        a priori point          15.614      0.002        0.931
        collinearity equations  26653.686   2.248       33.325
```

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR15I	1	4.442	1.770	3.207	-6.596632	-3.370911	0.389689
2	PAR15D	1	4.992	1.705	3.254	-6.650346	4.985461	1.608753

Point Results for Iteration 2

| | | | Current Correction | | | Current Position | | |
Point ID	Type	Description	X	Y	Z	X	Y	Z
48	C		-0.007	-0.003	-0.011	5.481	1.857	-0.533
48B	C		-0.007	-0.004	0.021	5.603	1.006	-0.138
49	C		-0.003	0.006	-0.007	4.596	1.688	-0.503
50	C		0.014	-0.005	-0.007	4.638	1.271	-0.168
51	C		-0.008	0.013	0.012	4.104	1.882	-0.504
52	C		0.012	-0.007	-0.008	4.219	1.119	-0.093

Frame Parameter Residuals (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR15I	1	-0.389	0.208	-0.038	6.596632	3.370911	-0.091577
2	PAR15D	1	-0.394	-0.316	-0.093	6.650346	-4.985461	-0.256684

Point Residuals (Meter) / Image Residuals

Point ID	Type	X	Y	Z	Frame ID	Sample	Line	Image X	Image Y
48	C	0.001	0.003	-0.003					
					PAR15I	3.37	-0.48	3.4	0.5
					PAR15D	4.00	-2.02	4.0	2.0
48B	C	-0.001	-0.001	0.001					
					PAR15I	6.06	0.77	6.1	-0.8
					PAR15D	9.60	1.21	9.6	-1.2
49	C	0.001	-0.001	0.002					
					PAR15I	1.40	0.17	1.4	-0.2
					PAR15D	-1.09	-1.67	-1.1	1.7
50	C	-0.003	-0.001	-0.000					
					PAR15I	1.94	0.72	1.9	-0.7
					PAR15D	-0.78	0.01	-0.8	-0.0

```
51        C      0.002    -0.001    -0.002
                                              PAR15I            1.27    -0.46     1.3      0.5
                                              PAR15D           -2.88    -1.54    -2.9      1.5
52        C      0.000     0.001     0.001
                                              PAR15I            0.78     0.74     0.8     -0.7
                                              PAR15D           -4.05     0.90    -4.0     -0.9
                              Averages:       0.001     0.001     0.002
                              RMS:            0.002     0.002     0.002

                   Averages:       3.10      0.89      3.1      0.9
                        RMS:       3.99      1.07      4.0      1.1


                 ----- Results for Iteration  3 -----

                          Statistics Summary
                          ------------------
                   Number of Equations:   54
                   Number of Unknowns:    30
                   Degrees of Freedom:    24

              Standard Deviation of Unit Weight: 5.842843

              Category              VTPV Sum     Ratio      Sigma0
              a priori photo           3.077     0.017      0.506
              a priori point           0.515     0.002      0.169
              collinearity equations 815.739     2.240      5.830


               Frame Parameters  (Unit is Meter and degrees)
       Frame   Description   Cam      X             Y             Z          Omega         Phi          Kappa
       -----   -----------   ---   ----------    ----------    ----------   ----------   ----------   ----------
        1  PAR15I           1     4.414         1.760         3.193       -6.451019    -3.800947    0.409998
        2  PAR15D           1     4.957         1.690         3.237       -6.434488     4.472910    1.599888


                      Point Results for Iteration  3

                     Current Correction                 Current Position
       Point ID  Type  Description      X             Y             Z            X             Y             Z
       --------  ----  -----------  ----------    ----------    ----------   ----------    ----------    ----------
       48        C                    0.000         0.001         0.001        5.482         1.858        -0.531
       48B       C                    0.001        -0.000        -0.003        5.604         1.006        -0.141
       49        C                    0.000        -0.000         0.001        4.596         1.688        -0.503
       50        C                   -0.002         0.000         0.002        4.636         1.271        -0.166
       51        C                    0.002        -0.001        -0.002        4.105         1.880        -0.507
       52        C                   -0.001         0.001         0.001        4.218         1.120        -0.092
```

RESULTADOS PAR16

```
----- Results for Iteration  7 -----

              Statistics Summary
              ------------------
         Number of Equations:   54
         Number of Unknowns:    30
         Degrees of Freedom:    24


      Standard Deviation of Unit Weight: 7.855704


         Category              VTPV Sum      Ratio        Sigma0
         a priori photo           4.773      0.015         0.631
         a priori point           4.539      0.009         0.502
         collinearity equations 1471.778     2.236         7.831
```

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR16I	1	5.498	1.728	3.414	-6.158534	-9.161999	-1.030661
2	PAR16D	1	6.076	1.710	3.469	-5.833880	-0.803316	0.353345

Point Results for Iteration 7

| | | | Current Correction | | | Current Position | | |
Point ID	Type	Description	X	Y	Z	X	Y	Z
44	C		0.001	-0.001	0.000	7.083	1.597	-0.463
46	C		-0.000	-0.002	0.005	6.161	1.962	-0.572
47	C		0.003	0.005	-0.010	6.243	0.683	-0.595
48	C		0.002	-0.004	-0.009	5.484	1.858	-0.535
48B	C		-0.005	0.002	0.014	5.601	1.006	-0.135
R45	T	RELATIVO	0.018	-0.008	-0.052	6.973	0.592	-0.497

Frame Parameter Residuals (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR16I	1	-0.415	0.648	0.112	6.158534	9.161999	-0.653708
2	PAR16D	1	-0.400	0.067	0.001	5.833880	0.803316	-1.257977

| | | Point Residuals (Meter) | | | | Image Residuals | | | |
Point ID	Type	X	Y	Z	Frame ID	Sample	Line	Image X	Image Y
44	C	0.002	0.000	0.000					
					PAR16I	0.19	0.33	0.2	-0.3
					PAR16D	0.15	0.57	0.2	-0.6
46	C	-0.000	-0.003	-0.000					
					PAR16I	-0.36	0.66	-0.4	-0.7
					PAR16D	-0.92	-0.06	-0.9	0.1
47	C	-0.001	0.002	0.003					
					PAR16I	-0.46	0.70	-0.5	-0.7
					PAR16D	-0.96	1.00	-1.0	-1.0
48	C	-0.002	0.002	-0.001					
					PAR16I	-0.48	0.10	-0.5	-0.1
					PAR16D	-1.34	0.11	-1.3	-0.1

```
48B        C        0.001     -0.001     -0.002
                                                    PAR16I            -1.40      1.35      -1.4      -1.4
                                                    PAR16D            -2.68      1.21      -2.7      -1.2
R45        T
                                                    PAR16I             1.02      0.17       1.0      -0.2
                                                    PAR16D             1.48      0.19       1.5      -0.2
                                           Averages:     0.001     0.002     0.001
                                                RMS:     0.002     0.002     0.002


                               Averages:     0.95      0.54       1.0       0.5
                                    RMS:     1.18      0.69       1.2       0.7



                    ----- Results for Iteration  8 -----

                              Statistics Summary
                              ------------------
                       Number of Equations:   54
                       Number of Unknowns:    30
                       Degrees of Freedom:    24

                  Standard Deviation of Unit Weight: 1.983025

            Category            VTPV Sum      Ratio        Sigma0
            a priori photo         4.663      0.222         0.623
            a priori point         0.494      0.016         0.166
            collinearity equations 89.221     2.127         1.928


                  Frame Parameters  (Unit is Meter and degrees)
         Frame   Description   Cam      X             Y             Z            Omega         Phi          Kappa
         -----   -----------   ---   ---------     ---------     ---------    ----------   ----------   ----------
           1   PAR16I           1      5.495         1.725         3.411      -6.105494    -9.221721    -1.020565
           2   PAR16D           1      6.074         1.707         3.465      -5.785811    -0.851712     0.363274


                        Point Results for Iteration  8

                          Current Correction                  Current Position
         Point ID  Type   Description      X             Y             Z            X             Y             Z
         --------  ----   -----------   ---------     ---------     ---------    ---------     ---------     ---------
         44        C                       0.000         0.000        -0.000       7.083         1.597        -0.463
         46        C                      -0.000        -0.000         0.000       6.161         1.962        -0.571
         47        C                       0.000         0.001        -0.000       6.243         0.683        -0.595
         48        C                       0.000        -0.000        -0.000       5.485         1.858        -0.535
         48B       C                      -0.001        -0.000         0.000       5.601         1.006        -0.135
         R45       T      RELATIVO         0.002         0.000        -0.004       6.976         0.592        -0.501
```

RESULTADOS PAR17

```
                            ----- Results for Iteration  8 -----

                                   Statistics Summary
                                   ------------------
                            Number of Equations:   54
                            Number of Unknowns:    30
                            Degrees of Freedom:    24

                        Standard Deviation of Unit Weight: 321.745698

                    Category              VTPV Sum       Ratio        Sigma0
                    a priori photo           20.809       0.000        1.317
                    a priori point           93.284       0.000        2.277
                    collinearity equations 2484372.961    2.250      321.738

                            Frame Parameters  (Unit is Meter and degrees)
          Frame    Description    Cam     X             Y             Z             Omega        Phi          Kappa
          -----    ------------   ---   ---------     ---------     ---------     ---------    ---------    ---------
            1      PAR17I          1      11.165        1.777         3.493       -11.759238   -1.921613    -0.845645
            2      PAR17D          1      11.972        1.931         3.285       -15.467600    9.899495     2.802597


                                   Point Results for Iteration  8

                             Current Correction                    Current Position
          Point ID  Type   Description      X             Y             Z             X             Y             Z
          --------  ----   ------------   ---------     ---------     ---------     ---------     ---------     ---------
            36       C                      0.028        -0.005        0.027        12.229        1.326        -0.437
            37       C                     -0.024        -0.007       -0.033        12.178        0.740        -0.073
            39       C                     -0.014        -0.016       -0.017        11.325        1.121        -0.535
            40       C                      0.047         0.017        0.022        11.380        0.353        -0.703
            42       C                     -0.045        -0.010       -0.011        10.286        0.970        -0.605
            43       C                      0.009         0.020        0.013        10.353        0.376        -0.631


                            Frame Parameter Residuals  (Unit is Meter and degrees)
          Frame    Description    Cam     X             Y             Z             Omega        Phi          Kappa
          -----    ------------   ---   ---------     ---------     ---------     ---------    ---------    ---------
            1      PAR17I          1      -0.840        0.143         0.067        11.759238    1.921613     2.992008
            2      PAR17D          1      -1.064       -0.717         0.283        15.467600   -9.899495     3.571984


                    Point Residuals  (Meter)                       Image Residuals
          Point ID  Type     X          Y          Z       Frame ID              Sample       Line       Image X      Image Y
          --------  ----   --------   --------   --------   -----------------   --------     --------     --------     --------
          36         C      -0.002     -0.001     0.000
                                                           PAR17I               -31.73       -3.36        -31.7         3.4
                                                           PAR17D               -35.33       -4.94        -35.3         5.0
          37         C       0.008      0.004     0.000
                                                           PAR17I               -22.91        2.08        -22.9        -2.1
                                                           PAR17D               -24.87       -0.05        -24.9         0.1
          39         C       0.003     -0.003    -0.003
                                                           PAR17I               -33.32       -2.11        -33.3         2.1
                                                           PAR17D               -29.43       -3.65        -29.4         3.7
          40         C      -0.007      0.004     0.006
                                                           PAR17I               -38.27        2.35        -38.3        -2.4
                                                           PAR17D               -33.66       -0.72        -33.7         0.7
          42         C       0.002     -0.002    -0.003
```

```
                                                   PAR17I              -38.15      -1.61      -38.2        1.6
                                                   PAR17D              -28.15      -2.77      -28.2        2.8
43          C         -0.003    -0.000    -0.001
                                                   PAR17I              -43.37       1.20      -43.4       -1.2
                                                   PAR17D              -32.70      -1.62      -32.7        1.6
                                       Averages:    0.004     0.003     0.002
                                       RMS:         0.005     0.003     0.003

                            Averages:    32.66      2.21      32.7        2.2
                            RMS:         33.13      2.55      33.1        2.6


                          ----- Results for Iteration  9 -----

                                  Statistics Summary
                                  ------------------
                            Number of Equations:   54
                            Number of Unknowns:    30
                            Degrees of Freedom:    24

                       Standard Deviation of Unit Weight: 46.939011

                       Category          VTPV Sum      Ratio      Sigma0
                       a priori photo       14.836      0.001       1.112
                       a priori point        2.428      0.000       0.367
                       collinearity equations 52861.234  2.249      46.931


                            Frame Parameters  (Unit is Meter and degrees)
          Frame    Description   Cam      X            Y            Z          Omega        Phi        Kappa
          -----   ------------   ---   ----------   ----------   ----------   ----------   ----------   ----------
            1    PAR17I          1      11.225        1.774        3.462     -11.827863    -1.521497    -0.774399
            2    PAR17D          1      12.027        1.924        3.253     -15.514933    10.364782     2.859122


                                  Point Results for Iteration  9

                         Current Correction                    Current Position
        Point ID  Type   Description       X            Y            Z            X            Y            Z
        --------  ----   ------------   ----------   ----------   ----------   ----------   ----------   ----------
        36         C                     -0.005       -0.000        0.003       12.225        1.326       -0.434
        37         C                      0.007        0.002        0.001       12.185        0.742       -0.072
        39         C                      0.003       -0.001       -0.003       11.328        1.121       -0.538
        40         C                     -0.006        0.001       -0.000       11.374        0.353       -0.703
        42         C                      0.004       -0.001       -0.001       10.289        0.969       -0.606
        43         C                     -0.003       -0.000       -0.001       10.351        0.376       -0.632
```

RESULTADOS PAR18

```
                          ----- Results for Iteration  5 -----

                                   Statistics Summary
                                   ------------------
                          Number of Equations:   54
                          Number of Unknowns:    30
                          Degrees of Freedom:    24


                         Standard Deviation of Unit Weight: 1.851948


                      Category            VTPV Sum      Ratio       Sigma0
                      a priori photo         3.863       0.211       0.567
                      a priori point         8.291       0.302       0.679
                      collinearity equations 70.159      1.918       1.710


                          Frame Parameters  (Unit is Meter and degrees)
          Frame    Description    Cam    X            Y            Z          Omega        Phi         Kappa
          -----  ---------------  ---  ----------  ----------  ----------  ----------  ----------  ----------

            1  PAR18I             1    11.089       1.752       3.097      -2.746674   -3.145022   -0.611406
            2  PAR18D             1    12.013       1.949       3.276      -5.842562    9.896577    1.325227


                                  Point Results for Iteration  5

                           Current Correction                    Current Position
          Point ID Type   Description       X           Y           Z           X           Y           Z
          -------- ----  ----------------  ----------  ----------  ----------  ----------  ----------  ----------
            35       T                      -0.000      -0.002       0.022      12.124       1.859      -0.745
            36       C                       0.001       0.002       0.010      12.224       1.324      -0.439
            38       C                       0.000      -0.000      -0.000      11.387       2.085      -0.745
            39       C                      -0.001      -0.003      -0.019      11.327       1.116      -0.535
            41       C                      -0.001       0.000      -0.000      10.521       1.636      -0.562
            42       C                       0.001       0.002       0.009      10.290       0.967      -0.610


                       Frame Parameter Residuals  (Unit is Meter and degrees)
          Frame    Description    Cam    X            Y            Z          Omega        Phi         Kappa
          -----  ---------------  ---  ----------  ----------  ----------  ----------  ----------  ----------

            1  PAR18I             1    -0.170       0.202      -0.013       2.746674    3.145022    0.414131
            2  PAR18D             1    -0.390      -0.703       0.148       5.842562   -9.896577    1.534771


                      Point Residuals  (Meter)                      Image Residuals
          Point ID Type     X          Y          Z      Frame ID            Sample       Line      Image X     Image Y
          -------- ----  ----------  ---------- ----------  ------------------------  ----------  ----------  ----------  ----------
          35       T
                                                            PAR18I                     0.16       -0.11        0.2         0.1
                                                            PAR18D                     0.54       -0.12        0.5         0.1
          36       C      0.003       0.001      0.002
                                                            PAR18I                     0.57        0.01        0.6        -0.0
                                                            PAR18D                     0.60        0.27        0.6        -0.3
          38       C     -0.002      -0.004     -0.001
                                                            PAR18I                     0.03       -0.36        0.0         0.4
                                                            PAR18D                     0.15        0.28        0.2        -0.3
          39       C      0.001       0.002     -0.003
                                                            PAR18I                     0.81        0.52        0.8        -0.5
                                                            PAR18D                    -0.19        0.21       -0.2        -0.2
          41       C      0.001       0.000      0.001
```

```
                                         PAR18I              -0.15       0.22       -0.2       -0.2
                                         PAR18D              -0.17      -0.06       -0.2        0.1
42        C      -0.002    0.001    0.002
                                         PAR18I              -0.29       0.29       -0.3       -0.3
                                         PAR18D               0.03       0.16        0.0       -0.2
                               Averages:    0.002    0.002    0.002
                               RMS:         0.002    0.002    0.002

                     Averages:    0.31     0.22     0.3      0.2
                          RMS:    0.39     0.26     0.4      0.3


                         ----- Results for Iteration  6 -----

                                   Statistics Summary
                                   ------------------
                            Number of Equations:   54
                            Number of Unknowns:    30
                            Degrees of Freedom:    24

                        Standard Deviation of Unit Weight: 0.808425

                     Category           VTPV Sum      Ratio      Sigma0
                     a priori photo        4.474      1.284       0.611
                     a priori point        0.643      0.123       0.189
                     collinearity equations 10.569    1.516       0.664


                           Frame Parameters  (Unit is Meter and degrees)
         Frame   Description    Cam    X            Y            Z            Omega        Phi          Kappa
         -----   -----------    ---  -----------  -----------  -----------  -----------  -----------  -----------
           1   PAR18I            1    11.072       1.758        3.096       -2.837922    -3.388298    -0.608818
           2   PAR18D            1    12.019       1.941        3.274       -5.734881     9.992351     1.325685


                             Point Results for Iteration  6

                          Current Correction                Current Position
         Point ID  Type   Description     X            Y            Z            X            Y            Z
         --------  ----   -----------   -----------  -----------  -----------  -----------  -----------  -----------
         35        T                     -0.000       0.000        0.003       12.124       1.859       -0.742
         36        C                      0.000       0.000        0.001       12.225       1.324       -0.439
         38        C                     -0.000      -0.000       -0.000       11.387       2.085       -0.745
         39        C                     -0.000      -0.000       -0.001       11.327       1.116       -0.536
         41        C                     -0.000      -0.000       -0.000       10.521       1.636       -0.562
         42        C                      0.000       0.000        0.001       10.291       0.967       -0.609
```

RESULTADOS PAR19

```
----- Results for Iteration  6 -----

                      Statistics Summary
                      ------------------
            Number of Equations:   61
            Number of Unknowns:    33
            Degrees of Freedom:    28


            Standard Deviation of Unit Weight: 116.657423

            Category              VTPV Sum      Ratio       Sigma0
            a priori photo          12.488      0.000        1.020
            a priori point           4.749      0.000        0.476
            collinearity equations 381033.484   2.178      116.655
```

```
                 Frame Parameters  (Unit is Meter and degrees)
    Frame   Description     Cam      X            Y            Z           Omega        Phi         Kappa
    -----  ---------------  ---  ------------ ------------ ------------  ----------- ----------- -----------
      1    PAR19I            1      12.077        2.122        3.112     -13.449901  -11.475088   -2.197628
      2    PAR19D            1      13.250        2.251        3.080     -15.216093    3.324405    1.005482
```

```
                         Point Results for Iteration  6

                     Current Correction                       Current Position
    Point ID  Type   Description        X            Y            Z            X            Y            Z
    --------  ----   ---------------- ------------ ------------ ------------ ------------ ------------ ------------
      31       C                         0.001        0.003       -0.005       13.778        1.781       -0.519
      32       C                        -0.001        0.003        0.001       13.806        1.048       -0.309
      33       C                         0.005        0.001       -0.004       13.277        1.749       -0.621
      34       C                        -0.000        0.003        0.001       13.246        1.096       -0.382
      35       C                         0.009       -0.007        0.008       12.117        1.855       -0.740
      36       C                         0.001        0.001        0.001       12.218        1.323       -0.434
      37       C                        -0.014       -0.004       -0.002       12.179        0.737       -0.075
```

```
                 Frame Parameter Residuals  (Unit is Meter and degrees)
    Frame   Description     Cam      X            Y            Z           Omega        Phi         Kappa
    -----  ---------------  ---  ------------ ------------ ------------  ----------- ----------- -----------
      1    PAR19I            1      -0.826        0.765        0.027      13.449901   11.475088   -0.123516
      2    PAR19D            1      -0.942       -0.214       -0.030      15.216093   -3.324405   -0.736251
```

```
                    Point Residuals  (Meter)                            Image Residuals
    Point ID  Type     X          Y          Z        Frame ID          Sample      Line      Image X     Image Y
    --------  ----  ---------- ---------- ----------  ------------------------ ---------- ---------- ---------- ----------
      31       C     0.002     -0.005      0.004
                                                      PAR19I                    -4.57      -1.30      -4.6        1.3
                                                      PAR19D                    -0.52      -1.32      -0.5        1.3
      32       C    -0.002     -0.001      0.002
                                                      PAR19I                    -4.18      -1.55      -4.2        1.6
                                                      PAR19D                    -0.25      -1.25      -0.3        1.3
      33       C     0.002     -0.004      0.002
                                                      PAR19I                    -4.91      -1.21      -4.9        1.2
                                                      PAR19D                    -0.59      -1.21      -0.6        1.2
      34       C     0.002      0.001     -0.003
                                                      PAR19I                    -4.64      -1.51      -4.6        1.5
```

```
                                              PAR19D              -0.40    -1.09    -0.4     1.1
35        C     -0.020    0.002   -0.004
                                              PAR19I              -5.85    -0.89    -5.8     0.9
                                              PAR19D              -0.75    -1.62    -0.8     1.6
36        C      0.009    0.002   -0.003
                                              PAR19I              -5.49    -1.24    -5.5     1.2
                                              PAR19D              -0.56    -1.10    -0.6     1.1
37        C      0.007    0.007    0.002
                                              PAR19I              -4.84    -1.67    -4.8     1.7
                                              PAR19D              -0.42    -0.96    -0.4     1.0
                                   Averages:   0.006    0.003    0.003
                                   RMS:        0.009    0.004    0.003

                        Averages:   2.71     1.28     2.7      1.3
                             RMS:   3.52     1.30     3.5      1.3


                      ----- Results for Iteration  7 -----

                              Statistics Summary
                              ------------------
                      Number of Equations:   61
                      Number of Unknowns:    33
                      Degrees of Freedom:    28

               Standard Deviation of Unit Weight: 5.375399

               Category            VTPV Sum      Ratio       Sigma0
               a priori photo        14.365      0.090       1.094
               a priori point         7.125      0.026       0.582
               collinearity equations 787.567    2.121       5.304

                      Frame Parameters  (Unit is Meter and degrees)
          Frame     Description    Cam      X             Y             Z           Omega         Phi          Kappa
          -----  ----------------  ---  ------------  ------------  ------------  -----------  -----------  -----------
            1    PAR19I             1      12.092        2.116         3.117      -13.352668   -11.313153    -2.217877
            2    PAR19D             1      13.257        2.243         3.079      -15.100437     3.415504     0.994497


                         Point Results for Iteration  7

                            Current Correction               Current Position
          Point ID  Type  Description      X             Y             Z             X             Y             Z
          --------  ----  ----------------  ------------  ------------  ------------  ------------  ------------  ------------
          31         C                        -0.000        -0.001        0.001        13.778        1.781        -0.518
          32         C                        -0.000        -0.000       -0.000        13.805        1.047        -0.310
          33         C                        -0.000        -0.000        0.001        13.277        1.749        -0.620
          34         C                         0.000        -0.000       -0.000        13.246        1.096        -0.383
          35         C                        -0.001         0.001       -0.001        12.117        1.856        -0.741
          36         C                         0.000        -0.000       -0.000        12.218        1.323        -0.434
          37         C                         0.001         0.000        0.001        12.180        0.738        -0.074
```

RESULTADOS PAR20

```
                          ----- Results for Iteration  2 -----

                                  Statistics Summary
                                  ------------------
                          Number of Equations:   47
                          Number of Unknowns:    27
                          Degrees of Freedom:    20


                       Standard Deviation of Unit Weight: 19.532848

                    Category            VTPV Sum        Ratio       Sigma0
                    a priori photo        13.237        0.007        1.050
                    a priori point         5.123        0.002        0.584
                    collinearity equations 7612.283     2.344       19.509


                        Frame Parameters  (Unit is Meter and degrees)
           Frame    Description    Cam     X            Y             Z          Omega        Phi         Kappa
           -----  --------------- ---  ------------ ------------- ------------- ----------- ----------- -----------
             1  PAR20I            1      13.889       2.326         3.108     -13.744612   -9.695920    0.408466
             2  PAR20D            1      14.964       2.476         3.148     -16.456070    4.184306    3.608045


                              Point Results for Iteration  2

                          Current Correction                    Current Position
           Point ID  Type  Description      X           Y             Z            X            Y            Z
           --------  ----  ---------------- ------------ ------------- ------------- ------------ ------------ -------------
             28       C                      -0.010      -0.006         0.005       15.393        1.295       -0.352
             29       C                      -0.005       0.003        -0.003       14.604        1.842       -0.513
             30       C                       0.012      -0.001        -0.001       14.597        1.387       -0.370
             31       C                      -0.008       0.012         0.000       13.778        1.779       -0.513
             32       C                       0.011      -0.009         0.000       13.807        1.044       -0.310


                        Frame Parameter Residuals  (Unit is Meter and degrees)
           Frame    Description    Cam     X            Y             Z          Omega        Phi         Kappa
           -----  --------------- ---  ------------ ------------- ------------- ----------- ----------- -----------
             1  PAR20I            1      -0.867       0.626         0.081      13.744612    9.695920   -0.048826
             2  PAR20D            1      -1.054      -0.295         0.071      16.456070   -4.184306    0.228139


                    Point Residuals   (Meter)                      Image Residuals
           Point ID  Type    X          Y          Z       Frame ID              Sample        Line      Image X     Image Y
           --------  ----  ---------- ---------- ----------  -----------------------  ----------  ----------  ----------  ----------
           28        C      0.003      0.001      0.002
                                                            PAR20I                  6.97       -11.12        7.0        11.2
                                                            PAR20D                 36.25        -8.01       36.3         8.0
           29        C      0.000     -0.003     -0.003
                                                            PAR20I                 12.40        -8.75       12.4         8.8
                                                            PAR20D                 23.12       -13.25       23.1        13.3
           30        C     -0.003      0.002      0.000
                                                            PAR20I                  8.81        -9.51        8.8         9.5
                                                            PAR20D                 20.56        -8.43       20.6         8.5
           31        C      0.002     -0.003     -0.002
                                                            PAR20I                 14.21        -8.67       14.2         8.7
                                                            PAR20D                  5.91       -13.85        5.9        13.9
           32        C     -0.003      0.003      0.003
                                                            PAR20I                  8.64       -10.29        8.6        10.3
```

```
                                        PAR20D             1.85      -3.45        1.8        3.5
                            Averages:    0.002    0.002    0.002
                                 RMS:    0.002    0.002    0.003


                 Averages:    13.87     9.53    13.9      9.6
                      RMS:    16.93     9.93    16.9     10.0


                     ----- Results for Iteration  3 -----

                            Statistics Summary
                            ------------------
                       Number of Equations:   47
                       Number of Unknowns:    27
                       Degrees of Freedom:    20

                  Standard Deviation of Unit Weight: 4.709451

              Category            VTPV Sum      Ratio       Sigma0
              a priori photo        15.125      0.134        1.123
              a priori point         0.902      0.006        0.245
              collinearity equations 427.552    2.265        4.624

                     Frame Parameters  (Unit is Meter and degrees)
         Frame    Description   Cam      X            Y            Z          Omega        Phi         Kappa
         -----  ---------------  ---  -----------  -----------  -----------  ----------  ----------  ----------
           1    PAR20I           1      13.813        2.247        3.114    -12.627057  -10.756676    0.481261
           2    PAR20D           1      14.876        2.438        3.122    -16.128613    3.147653    3.570719

                            Point Results for Iteration  3

                           Current Correction                   Current Position
         Point ID  Type  Description      X            Y            Z            X            Y            Z
         --------  ----  ---------------  -----------  -----------  -----------  -----------  -----------  -----------
         28        C                        0.002        0.001       -0.000       15.395        1.295       -0.352
         29        C                        0.001       -0.000        0.001       14.605        1.841       -0.512
         30        C                       -0.002       -0.001       -0.001       14.595        1.386       -0.372
         31        C                        0.001       -0.002       -0.000       13.779        1.777       -0.513
         32        C                       -0.001        0.002        0.001       13.805        1.046       -0.310
```

RESULTADOS PAR21

```
----- Results for Iteration  3 -----

                            Statistics Summary
                            -----------------
                    Number of Equations:   54
                    Number of Unknowns:    30
                    Degrees of Freedom:    24


                Standard Deviation of Unit Weight: 390.946336

            Category             VTPV Sum      Ratio        Sigma0
            a priori photo          6.563      0.000        0.740
            a priori point         10.520      0.000        0.764
            collinearity equations 3668119.817 2.250      390.945
```

```
                   Frame Parameters  (Unit is Meter and degrees)
       Frame   Description     Cam     X            Y            Z           Omega        Phi          Kappa
       -----   ---------------- ---   ------------ ------------ ------------ -----------  -----------  -----------
         1 PAR21I               1       1.382        2.702        4.236      -18.127936    3.020088    -0.663990
         2 PAR21D               1       2.278        2.561        4.273      -16.332894    9.685539     1.547066
```

```
                        Point Results for Iteration  3

                   Current Correction                    Current Position
       Point ID  Type   Description    X            Y            Z            X            Y            Z
       --------  ----   ---------------- ------------ ------------ ------------ ------------ ------------ ------------
          1       C                        0.009        0.009       -0.002        0.107        1.138       -0.165
          2       C                       -0.008       -0.008       -0.009        0.200        0.734       -0.125
          3       C                        0.007        0.001        0.015        1.278        1.215       -0.435
          4       C                       -0.007       -0.015        0.005        1.061        0.725       -0.330
          5       C                        0.005        0.011       -0.004        2.117        1.197       -0.438
          6       C                       -0.007        0.001       -0.005        2.099        0.697       -0.394
```

```
                   Frame Parameter Residuals  (Unit is Meter and degrees)
       Frame   Description     Cam     X            Y            Z           Omega        Phi          Kappa
       -----   ---------------- ---   ------------ ------------ ------------ -----------  -----------  -----------
         1 PAR21I               1      -1.571       -0.303        0.174       18.127936   -3.020088    -2.969015
         2 PAR21D               1      -1.437       -0.884        0.209       16.332894   -9.685539    -2.358704
```

```
                   Point Residuals  (Meter)                        Image Residuals
       Point ID  Type     X          Y          Z       Frame ID           Sample      Line      Image X     Image Y
       --------  ----  ---------- ---------- ----------  ------------------------  ----------  ----------  ----------  ----------
       1         C      0.001     -0.001     -0.004
                                                         PAR21I              34.39     -68.78       34.4       69.0
                                                         PAR21D              12.30     -63.90       12.3       64.1
       2         C      0.000      0.001      0.013
                                                         PAR21I              28.47     -48.86       28.5       49.0
                                                         PAR21D               5.21     -46.88        5.2       47.0
       3         C      0.003     -0.001     -0.016
                                                         PAR21I              65.49     -78.78       65.5       79.0
                                                         PAR21D              49.83     -72.23       49.8       72.4
       4         C     -0.001      0.000     -0.001
                                                         PAR21I              53.63     -56.14       53.6       56.3
                                                         PAR21D              33.93     -52.70       33.9       52.8
```

```
5          C          0.000     0.004     0.002
                                                    PAR21I           80.92    -79.84     80.9     80.0
                                                    PAR21D           69.92    -72.99     69.9     73.2
6          C         -0.003    -0.002     0.005
                                                    PAR21I           76.00    -59.64     76.0     59.8
                                                    PAR21D           61.53    -55.04     61.5     55.2
                                          Averages:   0.001     0.002     0.007
                                          RMS:        0.002     0.002     0.009


                        Averages:    47.64     62.98     47.6     63.1
                             RMS:    53.21     63.93     53.2     64.1



                         ----- Results for Iteration  4 -----

                                 Statistics Summary
                                 ------------------
                          Number of Equations:    54
                          Number of Unknowns:     30
                          Degrees of Freedom:     24

                    Standard Deviation of Unit Weight: 117.653160

              Category              VTPV Sum      Ratio       Sigma0
              a priori photo          29.055      0.000        1.556
              a priori point           5.128      0.000        0.534
              collinearity equations 332180.200   2.250      117.647


                     Frame Parameters  (Unit is Meter and degrees)
         Frame   Description   Cam     X             Y             Z           Omega         Phi          Kappa
         -----  -------------- ---  ------------  ------------  ------------  -----------  -----------  -----------
           1  PAR21I           1       1.127         2.411         4.208     -15.841313    0.829484    -1.073547
           2  PAR21D           1       2.046         2.299         4.273     -14.221289    7.780482     1.204417


                            Point Results for Iteration  4

                           Current Correction                    Current Position
         Point ID  Type  Description       X             Y             Z            X             Y             Z
         --------  ----  ---------------- ------------  ------------  ------------  ------------  ------------  ------------
         1         C                         0.004        -0.002         0.001        0.111         1.137        -0.164
         2         C                        -0.002        -0.002         0.003        0.198         0.732        -0.122
         3         C                         0.003         0.004        -0.006        1.280         1.219        -0.442
         4         C                        -0.003         0.001        -0.001        1.057         0.726        -0.331
         5         C                         0.002         0.000        -0.001        2.119         1.198        -0.438
         6         C                        -0.003        -0.001         0.004        2.096         0.695        -0.390
```

RESULTADOS PAR22

```
----- Results for Iteration  2 -----

Statistics Summary
------------------
Number of Equations:   54
Number of Unknowns:    30
Degrees of Freedom:    24

Standard Deviation of Unit Weight: 209.988735
```

Category	VTPV Sum	Ratio	Sigma0
a priori photo	38.266	0.000	1.786
a priori point	30.000	0.000	1.291
collinearity equations	1058218.190	2.250	209.982

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR22I	1	2.245	2.108	4.197	-12.679541	-5.576967	-1.489711
2	PAR22D	1	3.347	2.019	4.305	-11.468435	0.527083	-1.981979

Point Results for Iteration 2

			Current Correction			Current Position		
Point ID	Type	Description	X	Y	Z	X	Y	Z
5	C		-0.007	0.013	-0.002	2.112	1.199	-0.436
6	C		0.025	0.006	0.002	2.101	0.701	-0.390
7	C		-0.007	0.014	-0.016	3.257	1.149	-0.345
8	C		0.001	-0.037	0.012	2.999	0.616	-0.106
9	C		-0.004	0.009	-0.007	3.787	1.354	-0.257
10	C		-0.008	-0.004	0.012	3.662	0.647	-0.219

Frame Parameter Residuals (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR22I	1	-0.965	0.460	0.075	12.679541	5.576967	1.588689
2	PAR22D	1	-0.881	-0.046	0.021	11.468435	-0.527083	1.613195

		Point Residuals (Meter)				Image Residuals		
Point ID	Type	X	Y	Z	Frame ID	Sample	Line	Image X	Image Y
5	C	0.005	0.002	-0.000					
					PAR22I	-9.99	62.99	-10.0	-63.2
					PAR22D	-17.44	51.62	-17.4	-51.7
6	C	-0.005	-0.006	0.001					
					PAR22I	-12.97	68.00	-13.0	-68.2
					PAR22D	-15.60	60.16	-15.6	-60.3
7	C	0.002	-0.002	-0.006					
					PAR22I	0.93	62.36	0.9	-62.5
					PAR22D	-4.18	52.38	-4.2	-52.5
8	C	0.000	0.007	0.001					
					PAR22I	-8.12	70.85	-8.1	-71.0
					PAR22D	-6.33	64.73	-6.3	-64.9
9	C	-0.000	0.003	0.000					

```
                                          PAR22I              8.13      61.43      8.1     -61.6
                                          PAR22D              3.31      49.66      3.3     -49.8
10         C       -0.003    -0.004    0.005
                                          PAR22I             -2.26      71.02     -2.3     -71.2
                                          PAR22D              0.14      64.96      0.1     -65.1
                           Averages:    0.003    0.004    0.002
                           RMS:         0.003    0.005    0.003

              Averages:    7.45    61.68      7.5     61.8
              RMS:         9.23    62.06      9.2     62.2


                    ----- Results for Iteration  3 -----

                            Statistics Summary
                            ------------------
                       Number of Equations:   54
                       Number of Unknowns:    30
                       Degrees of Freedom:    24

                 Standard Deviation of Unit Weight: 88.835977

              Category            VTPV Sum     Ratio      Sigma0
              a priori photo        10.996     0.000       0.957
              a priori point         2.616     0.000       0.381
              collinearity equations 189390.329  2.250      88.833


                      Frame Parameters  (Unit is Meter and degrees)
        Frame    Description    Cam    X             Y             Z             Omega         Phi           Kappa
        -----    ------------   ---   ------------  ------------  ------------  -----------   -----------   -----------
          1   PAR22I            1      2.335         2.344         4.109      -14.961392     -4.632613     -1.679581
          2   PAR22D            1      3.424         2.238         4.176      -13.742605      1.388238     -2.200472

                           Point Results for Iteration  3

                      Current Correction                      Current Position
        Point ID Type  Description    X             Y             Z             X             Y             Z
        -------- ----  ------------  ------------  ------------  ------------  ------------  ------------  ------------
        5        C                     0.003         0.001        -0.000         2.115         1.201        -0.436
        6        C                    -0.003        -0.004         0.001         2.098         0.697        -0.389
        7        C                     0.001         0.001         0.003         3.258         1.150        -0.341
        8        C                     0.001         0.003        -0.004         3.000         0.618        -0.110
        9        C                    -0.000         0.003        -0.000         3.787         1.357        -0.257
        10       C                    -0.003        -0.004         0.000         3.659         0.643        -0.219
```

RESULTADOS PAR23

```
                         ----- Results for Iteration  2 -----

                                  Statistics Summary
                                  ------------------
                         Number of Equations:   54
                         Number of Unknowns:    30
                         Degrees of Freedom:    24


                      Standard Deviation of Unit Weight: 23.174044

                  Category              VTPV Sum        Ratio        Sigma0
                  a priori photo          23.336        0.008        1.395
                  a priori point          13.233        0.003        0.857
                  collinearity equations 12852.303      2.244       23.141


                            Frame Parameters  (Unit is Meter and degrees)
           Frame    Description    Cam      X            Y            Z           Omega        Phi          Kappa
           -----  ---------------  ---  ------------ ------------ ------------ ----------- ----------- -----------
             1    PAR23I           1       3.076        2.288        4.725      -12.605234  -19.763978   -4.996901
             2    PAR23D           1       5.157        2.030        5.164       -9.861113   -0.290201   -0.215421


                                  Point Results for Iteration  2

                              Current Correction                    Current Position
         Point ID  Type   Description      X            Y            Z            X            Y            Z
         --------  ----  ---------------  ------------ ------------ ------------ ------------ ------------ ------------
         9          C                      -0.012       -0.000        0.002        3.786        1.359       -0.254
         10         C                       0.006        0.009       -0.002        3.658        0.641       -0.214
         11         C                      -0.011       -0.005        0.000        5.101        1.312       -0.285
         12         C                       0.018        0.004       -0.001        4.964        0.318       -0.110
         13         C                      -0.006       -0.007       -0.001        6.303        1.208       -0.154
         14         C                       0.006       -0.002        0.003        6.588        0.701       -0.043


                            Frame Parameter Residuals  (Unit is Meter and degrees)
           Frame    Description    Cam      X            Y            Z           Omega        Phi          Kappa
           -----  ---------------  ---  ------------ ------------ ------------ ----------- ----------- -----------
             1    PAR23I           1      -1.159        1.931        0.628       12.605234   19.763978    0.384791
             2    PAR23D           1      -0.932        0.016        0.077        9.861113    0.290201    0.602590


                       Point Residuals  (Meter)                          Image Residuals
         Point ID  Type     X          Y          Z        Frame ID            Sample       Line      Image X    Image Y
         --------  ----  ---------- ---------- ----------  ------------------------  ----------  ----------  ----------  ----------
         9          C      0.001     -0.002     -0.003
                                                           PAR23I              -36.67      -43.58      -36.7        43.7
                                                           PAR23D                0.82        0.45        0.8        -0.5
         10         C      0.001      0.002      0.000
                                                           PAR23I              -36.11      -44.84      -36.1        45.0
                                                           PAR23D                1.88       -0.21        1.9         0.2
         11         C     -0.005     -0.002     -0.004
                                                           PAR23I              -37.86      -38.94      -37.9        39.0
                                                           PAR23D                1.39        0.34        1.4        -0.3
         12         C     -0.002      0.004      0.003
                                                           PAR23I              -38.38      -39.34      -38.4        39.4
                                                           PAR23D                3.47       -0.20        3.5         0.2
         13         C     -0.002     -0.002     -0.001
```

```
                                    PAR23I          -36.83      -37.89      -36.8       38.0
                                    PAR23D            2.34        1.09        2.3       -1.1
14        C       0.006     0.000     0.004
                                    PAR23I          -35.04      -35.96      -35.0       36.1
                                    PAR23D            2.43       -0.11        2.4        0.1
                          Averages:   0.003     0.002     0.002
                               RMS:   0.003     0.002     0.003

                Averages:   19.44    20.25     19.4      20.3
                     RMS:   26.09    28.44     26.1      28.5


                   ----- Results for Iteration  3 -----

                              Statistics Summary
                              ------------------
                   Number of Equations:   54
                   Number of Unknowns:    30
                   Degrees of Freedom:    24

              Standard Deviation of Unit Weight: 9.173438

              Category            VTPV Sum      Ratio       Sigma0
              a priori photo        31.831      0.071        1.629
              a priori point         1.461      0.002        0.285
              collinearity equations 1986.355   2.213        9.098


                    Frame Parameters  (Unit is Meter and degrees)
          Frame   Description    Cam      X            Y            Z          Omega         Phi          Kappa
          -----   ------------   ---   ---------    ---------    ---------    ---------    ---------    ---------
            1   PAR23I           1      3.103        2.220        4.762     -12.309705   -19.823844    -4.943934
            2   PAR23D           1      5.090        2.035        5.166      -9.904330    -0.941545    -0.207807


                         Point Results for Iteration  3

                       Current Correction                    Current Position
         Point ID  Type  Description     X            Y            Z            X            Y            Z
         --------  ----  -----------  ---------    ---------    ---------    ---------    ---------    ---------
         9         C                    0.000       -0.001        0.000        3.787        1.358       -0.254
         10        C                    0.002        0.001       -0.000        3.660        0.642       -0.215
         11        C                   -0.002       -0.000       -0.001        5.099        1.312       -0.286
         12        C                   -0.002        0.000        0.000        4.962        0.318       -0.110
         13        C                    0.000        0.000       -0.001        6.303        1.208       -0.154
         14        C                    0.002       -0.000        0.001        6.590        0.700       -0.042
```

RESULTADOS PAR24

```
----- Results for Iteration  8 -----

                      Statistics Summary
                      -----------------
                 Number of Equations:   54
                 Number of Unknowns:    30
                 Degrees of Freedom:    24


              Standard Deviation of Unit Weight: 124.394145


          Category              VTPV Sum      Ratio        Sigma0
          a priori photo          44.605      0.001         1.928
          a priori point          19.613      0.000         1.044
          collinearity equations 371309.460   2.250       124.383
```

```
                      Frame Parameters  (Unit is Meter and degrees)
     Frame    Description    Cam     X             Y             Z           Omega         Phi          Kappa
     -----   ----------------  ---  ------------  ------------  ------------  -----------  -----------  -----------
       1    PAR24I            1      10.752        1.904         4.104       -13.735187   -16.155684    -0.591987
       2    PAR24D            1      11.875        1.875         4.325       -13.737230    -5.749495     2.324175
```

```
                               Point Results for Iteration  8


                          Current Correction                      Current Position
      Point ID  Type  Description      X             Y             Z             X             Y             Z
      --------  ----  ----------------  ------------  ------------  ------------  ------------  ------------  ------------
         62      C                       0.003        -0.017        0.016        11.653        1.170        -0.216
         63      C                      -0.023         0.003       -0.002        11.307        0.262        -0.078
         64      C                       0.019        -0.008       -0.009        12.453        0.921        -0.207
         65      C                       0.004         0.006       -0.012        12.460        0.404        -0.038
         66      C                       0.012        -0.004       -0.005        13.261        0.980        -0.196
         67      C                      -0.017         0.021        0.012        13.259        0.385         0.139
```

```
                      Frame Parameter Residuals  (Unit is Meter and degrees)
     Frame    Description    Cam     X             Y             Z           Omega         Phi          Kappa
     -----   ----------------  ---  ------------  ------------  ------------  -----------  -----------  -----------
       1    PAR24I            1      -1.037        1.278         0.381       13.735187    16.155684     0.370574
       2    PAR24D            1      -1.075        0.450        -0.004       13.737230     5.749495     0.835183
```

```
                Point Residuals  (Meter)                          Image Residuals
      Point ID  Type    X          Y          Z        Frame ID            Sample       Line       Image X     Image Y
      --------  ----  ---------- ---------- ----------  ------------------  ----------  ----------  ----------  ----------
         62      C    -0.002      0.004     -0.006
                                                        PAR24I               19.56       6.27        19.6        -6.3
                                                        PAR24D                6.46       9.12         6.5        -9.1
         63      C     0.004      0.001     -0.000
                                                        PAR24I               23.16       8.24        23.2        -8.3
                                                        PAR24D               10.90      26.11        10.9       -26.2
         64      C    -0.006     -0.000     -0.000
                                                        PAR24I               18.03       5.96        18.0        -6.0
                                                        PAR24D               17.30      11.84        17.3       -11.9
         65      C    -0.001      0.003      0.003
                                                        PAR24I               20.66       8.04        20.7        -8.1
                                                        PAR24D               22.85      22.90        22.9       -23.0
         66      C    -0.005     -0.005     -0.000
```

```
                                        PAR24I              18.08       6.23     18.1       -6.2
                                        PAR24D              26.55      11.99     26.6      -12.0
67        C       0.008    -0.001     0.004
                                        PAR24I              22.39       9.67     22.4       -9.7
                                        PAR24D              35.72      29.91     35.7      -30.0
                             Averages:    0.004    0.002    0.002
                                  RMS:    0.005    0.003    0.003

                    Averages:   20.14    13.02     20.1     13.1
                         RMS:   21.33    15.30     21.3     15.3


                    ----- Results for Iteration  9 -----

                             Statistics Summary
                             ------------------
                    Number of Equations:    54
                    Number of Unknowns:     30
                    Degrees of Freedom:     24

                 Standard Deviation of Unit Weight: 37.125718

            Category              VTPV Sum      Ratio       Sigma0
            a priori photo          23.576      0.003        1.402
            a priori point           2.592      0.000        0.379
            collinearity equations 33053.487    2.248       37.111


                   Frame Parameters  (Unit is Meter and degrees)
        Frame   Description    Cam    X             Y             Z             Omega         Phi          Kappa
        -----   ------------   ---    ----------    ----------    ----------    ----------    ----------   ----------
          1  PAR24I            1      10.769        2.020         4.083        -15.147982    -15.696019   -0.818345
          2  PAR24D            1      11.842        2.103         4.196        -16.673589     -6.003193    2.023592


                          Point Results for Iteration  9

                     Current Correction                    Current Position
        Point ID Type  Description     X             Y             Z             X             Y             Z
        -------- ----  ------------    ----------    ----------    ----------    ----------    ----------    ----------
        62       C                     0.000         0.004        -0.004         11.653        1.174        -0.220
        63       C                     0.002        -0.001        -0.001         11.309        0.262        -0.079
        64       C                    -0.004         0.002         0.003         12.449        0.923        -0.203
        65       C                     0.002         0.000         0.003         12.461        0.404        -0.035
        66       C                    -0.008        -0.002         0.002         13.253        0.977        -0.193
        67       C                     0.008        -0.003        -0.004         13.267        0.382         0.136
```

RESULTADOS PAR25

```
----- Results for Iteration  6 -----

                    Statistics Summary
                    ------------------
         Number of Equations:   54
         Number of Unknowns:    30
         Degrees of Freedom:    24


          Standard Deviation of Unit Weight: 85.503677

         Category              VTPV Sum     Ratio        Sigma0
         a priori photo          62.766     0.002         2.287
         a priori point          10.154     0.000         0.751
         collinearity equations 175388.169  2.249        85.486
```

```
                Frame Parameters  (Unit is Meter and degrees)
      Frame   Description   Cam      X            Y            Z          Omega        Phi         Kappa
      -----   -----------   ---   --------     --------     --------   ----------   ----------   ----------

        1   PAR25I           1     15.325       2.619        3.446     -26.834670   15.580914    9.128073
        2   PAR25D           1     16.189       2.822        3.205     -30.180443   24.535765   13.835080
```

```
                                    Point Results for Iteration  6

                         Current Correction                        Current Position
      Point ID  Type   Description      X            Y            Z            X            Y            Z
      --------  ----   -----------   --------     --------     --------     --------     --------     --------

        66       C                   -0.003       -0.004       -0.003       13.254        0.979       -0.188
        67       C                   -0.001        0.007        0.017       13.257        0.363        0.108
        68       T                   -0.013       -0.018       -0.056       14.142        1.076       -0.347
        69       C                    0.003       -0.010       -0.031       14.304        0.583       -0.102
        70       C                    0.001        0.006        0.017       15.214        0.969       -0.417
        71       T                    0.031        0.004        0.025       15.195        0.617       -0.270
```

```
                Frame Parameter Residuals  (Unit is Meter and degrees)
      Frame   Description   Cam      X            Y            Z          Omega        Phi         Kappa
      -----   -----------   ---   --------     --------     --------   ----------   ----------   ----------

        1   PAR25I           1     -1.852       -1.165        0.459     26.834670   -15.580914   -3.730582
        2   PAR25D           1     -2.026       -1.876        1.050     30.180443   -24.535765   -4.961829
```

```
                Point Residuals  (Meter)                        Image Residuals
      Point ID  Type     X          Y          Z      Frame ID          Sample       Line       Image X     Image Y
      --------  ----  --------   --------   --------   ----------------  --------   --------   --------   --------
        66       C     0.002     -0.004     -0.008
                                                       PAR25I             -1.89      -8.76       -1.9         8.8
                                                       PAR25D              3.99     -18.07        4.0        18.1
        67       C    -0.001      0.001      0.004
                                                       PAR25I             -2.90      -7.03       -2.9         7.0
                                                       PAR25D              2.28     -16.05        2.3        16.1
        68       T
                                                       PAR25I             -1.15      -5.35       -1.2         5.4
                                                       PAR25D              5.34     -15.53        5.3        15.6
        69       C     0.001      0.006      0.016
                                                       PAR25I             -1.38      -4.49       -1.4         4.5
                                                       PAR25D              5.23     -14.95        5.2        15.0
        70       C    -0.001     -0.002     -0.013
```

			PAR25I		3.74	-10.34	3.7	10.4
			PAR25D		15.87	-21.09	15.9	21.1
71	T							
			PAR25I		2.06	-10.44	2.1	10.5
			PAR25D		13.15	-20.03	13.2	20.1
		Averages:		0.001	0.003	0.010		
		RMS:		0.001	0.004	0.011		

	Averages:	4.92	12.68	4.9	12.7
	RMS:	6.68	13.80	6.7	13.8

----- Results for Iteration 7 -----

Statistics Summary

Number of Equations: 54
Number of Unknowns: 30
Degrees of Freedom: 24

Standard Deviation of Unit Weight: 21.782392

Category	VTPV Sum	Ratio	Sigma0
a priori photo	80.050	0.032	2.583
a priori point	5.561	0.001	0.556
collinearity equations	11301.731	2.233	21.700

Frame Parameters (Unit is Meter and degrees)

Frame	Description	Cam	X	Y	Z	Omega	Phi	Kappa
1	PAR25I	1	15.281	2.523	3.502	-25.393025	15.005417	8.926184
2	PAR25D	1	16.146	2.752	3.263	-29.157672	24.027936	13.667141

Point Results for Iteration 7

			Current Correction			Current Position		
Point ID	Type	Description	X	Y	Z	X	Y	Z
----------	------	-------------	---	---	---	---	---	---
66	C		-0.002	-0.000	-0.001	13.252	0.979	-0.189
67	C		0.004	0.002	-0.001	13.261	0.365	0.107
68	T		-0.002	0.000	0.008	14.140	1.076	-0.339
69	C		-0.003	-0.003	0.003	14.301	0.581	-0.098
70	C		0.001	0.001	-0.002	15.214	0.970	-0.419
71	T		-0.001	-0.001	-0.004	15.194	0.616	-0.274

Anexo 4: Listado de capas.

Listado de capas

Nombre	A...	Inutiliz...
0		
1_COTAS		
1_NUMEROS		
1_PUNTOS		
2_ALZADO_AGUAS ABAJO_NORTE		
2_ALZADO_AGUAS ABAJO_SUR		
2_ALZADO_AGUAS ARRIBA_NORTE		
2_ALZADO_AGUAS ARRIBA_SUR		
2_ALZADO_MARGEN DERECHA_NORTE		
2_ALZADO_MARGEN IZQUIERDA_SUR		
2_SUELO_NORTE		
2_SUELO_SUR		
2_CATA2000		
2_CATA4000		
2_LIMITE_EXCAVACION		
2_LINEAS_APOYO		
2_LINEAS_RIO_PIQUERAS		
2_VOLUMETRICO		
3_cajetin		
3_ventanas		

Capas relacionadas con elementos puntuales.

Capas relacionadas con elementos lineales

Capas relacionadas con elementos lineales tomados por métodos

Capas relacionadas con elementos auxiliares utilizados en la confección de los

PLANOS