

EARTH BASED OBSERVATIONS OF COMET HALLEY

José F. Barral¹, Manuel Ríos Berumen², Manuel Ríos Herrera²,
Alfonso Quintero¹, Atanasio Pani¹, Rosario Peniche¹, and José H. Peña¹

1. Instituto de Astronomía, Universidad Nacional Autónoma de México
2. Universidad Autónoma de Zacatecas

RESUMEN. Se obtuvieron fotografías directas y espectros de baja resolución del Cometa Halley desde los observatorios mexicanos José Arbol y Bonilla, San Pedro Mártir y Tonantzintla. Los espectros y algunas de las fotografías se han digitalizado utilizando una PDS.

ABSTRACT. Direct photographs and low resolution spectra were obtained at the José Arbol y Bonilla, San Pedro Mártir and Tonantzintla Observatories in México. The spectra and some photographs have been digitalized by means of a PDS.

Key words: COMETS-HALLEY — IMAGE PROCESSING — DIRECT IMAGE

Considering the plans of the "International Halley Watch", the authors, with the available instrumentation, engaged in the following observations:

Direct photography of Comet Halley was acquired at the José Arbol y Bonilla Observatory at Zacatecas, México with a Celestron Schmidt 14 camera with 2415 Kodak film, the log of the observations has been summarized in Table 1. Direct photography was also carried out at the Tonantzintla Observatory, México with a 35-mm camera with a 300-mm telephoto attached to the 1-m telescope; the emulsion utilized was Tri X Kodak film. These observations have also been summarized in Table 2.

Spectroscopic studies were carried out at the San Pedro Mártir, and Tonantzintla Observatories. At the former, the 2-m telescope with an echelle spectrograph with resolution of 30 Å/mm and IIA0 emulsion were employed. At the Tonantzintla Observatory, the 1-m telescope and a Boller and Chivens spectrograph at 125 Å/mm was utilized. The same emulsion was used. The Tonantzintla photographs were taken simultaneously with the spectra.

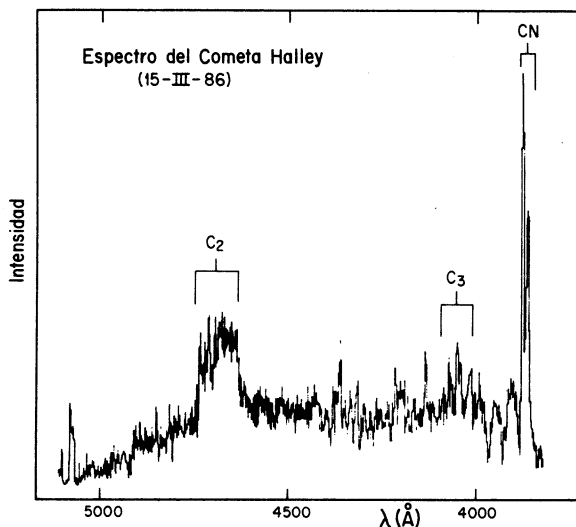


Fig. 1. Spectra of Comet Halley with a resolution of 125 Å/mm. It was observed in March 15, 1986.

TABLE 1. Log of photographic observations of Comet Halley
Date JD-2446000 Observatory

1985	Nov	7	376	JAB	Mar	12	501	JAB
		9	378	JAB				TON
		12	381	JAB		13	502	JAB
		14	383	JAB				TON
		15	384	JAB		15	504	TON
		16	385	JAB		16	505	JAB
		19	388	JAB				TON
	Dic	3	402	JAB		17	506	JAB
		4	403	JAB		19	508	TON
		6	405	JAB		20	509	JAB
		7	406	JAB				TON
		16	415	JAB		22	511	TON
		31	430	JAB		23	512	TON
1986	Jan	1	431	JAB	Apr	5	525	JAB
		2	432	JAB				TON
		3	433	JAB		6	526	JAB
		4	434	JAB				TON
		6	436	JAB		8	528	TON
		7	437	JAB		9	529	TON
		8	438	JAB		10	530	TON

TABLE 2. Log of spectroscopic observations of Comet Halley.

Date	JD-2446000	R	Observatory	Observer
Jan 17, 1986	447	0.78	SPM	RP, JHP
18	448	0.76	SPM	RP, JHP
19	449	0.75	SPM	RP, JHP
20	450	0.74	SPM	RP, JHP
Mar 11	500	0.86	TON	RP, JHP, AQ, AP
12	501	0.87	TON	RP, JHP
13	502	0.88	TON	RP, JHP
14	503	0.90	TON	JHP, AA
15	504	0.91	TON	JHP, AP
16	505	0.93	TON	JHP, AP
20	509	0.99	TON	AQ, AP
22	511	1.02	TON	RP, JHP, AQ
23	512	1.04	TON	RP, JHP, AQ
Apr 5	525	1.24	TON	RP, JHP, AP
8	528	1.28	TON	AP
9	529	1.30	TON	AQ
12	532	1.34	TON	AQ

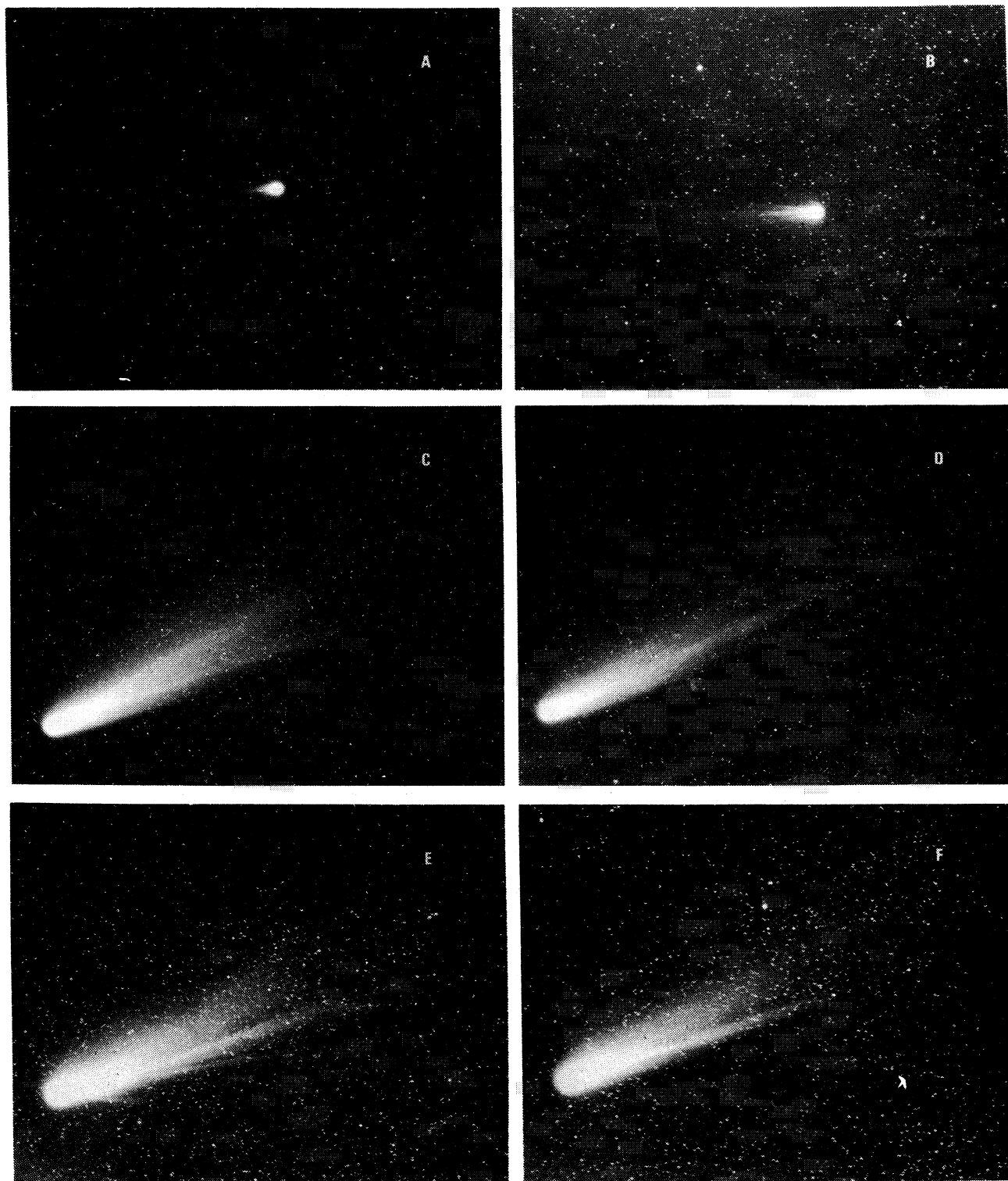


Fig. 2. Photographs of Halley's Comet taken in 1986 from the Observatorio de Zacatecas, México. The dates and exposure time of each one are the following: a) Jan. 3, 1^h30^m; b) Jan. 8, 1^h36^m; c) Mar. 11, 18^m; d) Mar. 12; 26^m; e) Mar. 16, 18^m; f) Mar. 19, 25^m.

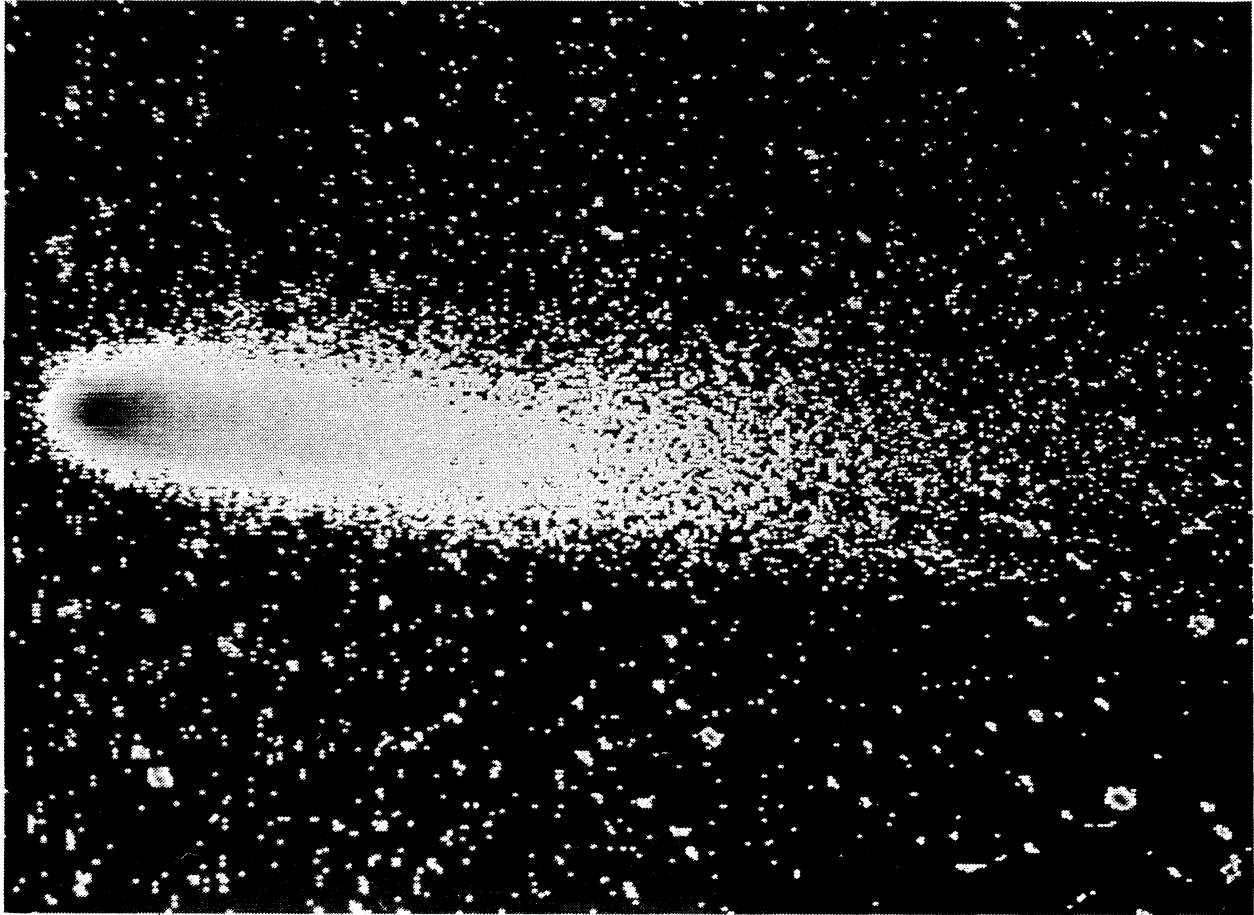


Fig. 3. Photograph of Comet Halley as it appeared in March 13, 1986. The image has been digitized and computer processed.

All the spectra and some of the photographs have been digitized. The PDS of the Instituto Nacional de Astrofísica, Óptica y Electrónica, INAOE, was employed. The images were processed at the Instituto de Astronomía, UNAM, México.

ACKNOWLEDGEMENTS

We would like to thank the staff of the Observatorio Astronómico Nacional for their assistance, to the INAOE for the available time provided at the PDS and to Ruben Ramos López, to Armando Arellano Ferro, and Teresa Gómez for their assistance at the digitalization. JoAnn Miller proofread this manuscript.

José F. Barral, Atanasio Pani, Rosario Peniche, José H. Peña, and Alfonso Quintero: Instituto de Astronomía, UNAM, Apartado Postal 70-264, 04510 México, D.F., México.

Manuel Ríos Berumen and Manuel Ríos Herrera: Universidad Autónoma de Zacatecas, Apartado Postal 275, Zacatecas, Zac., México.