ASTRONOMISCHE NACHRICHTEN.

N^o. 493.

Schreiben des Herrn *Rümker*, Directors der Hamburger Sternwarte, an den Herausgeber.
Hamburg 1843. Decbr. 5.

Ich erlaube mir Ihnen hiemit meine Beobachtungen des vom Herrn *Mauvais* entdeckten Cometen mitzutheilen, welche ich als sehr gelungen betrachte. Herr *Götze* hat sie mit vielem

Fleiße reducirt, und den Einfluss der Refraction beim Kreis-
micrometer berücksichtigt, die Parallaxe ist aber nicht dabei
in Rechnung getragen.

C. Rümker.

Scheinbare Positionen des von Herrn *Mauvais* entdeckten Cometen aus Beobachtungen von Herrn *Rümker*
auf der Hamburger Sternwarte.

Datum. 1843.	Mittl. Hamb. Zeit.	Scheinb. AR. des Com.	Scheinb. Decl. des Com.	Zahl d. Beobh.	Datum. 1843	Mittl. Hamb. Zeit.	Scheinb. AR. des Com.	Scheinb. Decl. des Com.	Zahl d. Beob.
Mai 24	12 ^h 49' 10" 05	337° 57' 22" 69	28° 10' 10" 78	10	Aug. 2	11 55 10,59	354 39 41,75	3 37 51,06	2
29	12 44 21,33	340 18 32,97	27 33 1,59	8	3	11 45 19,29	354 36 29,52	2 58 51,53	28
30	12 9 11,78	340 45 7,51	27 25 8,76	9	4	12 30 1,76	354 32 50,62	2 18 6,84	13
Juni 4	12 35 2,22	342 55 41,14	26 39 0,86	13	6	12 29 55,83	354 34 35,76	0 57 55,16	15
6	12 30 31,36	343 45 13,26	26 18 33,06	9	7	13 6 1,29	354 20 4,92	0 16 24,72	15
18	11 47 27,32	348 5 5	23 44 5	2	8	14 23 45,57	354 13 57,94	— 0 26 29,34	7
19	13 23 59,05	348 27 15,30	23 28 18,60	6	17	10 59 36,57	353 10 26,28	— 6 34 58,19	7
20	12 11 51,07	348 46 13,36	23 13 44,82	12	18	10 28 59,39	353 32 32,16	— 7 15 16,16	8
23	12 2 49,72	349 39 58,18	22 23 47,83	12	19	11 23 4,10	352 52 45,32	— 7 58 33,95	17
26	12 40 57,08	350 29 58,64	21 28 49,66	7	25	13 15 20,47	351 51 1,76	— 12 5 10,71	13
Juli 3	12 57 34,79	352 9 42,68	19 4 19,69	5	26	12 52 48,08	351 40 12,20	— 12 44 9,61	18
4	12 6 56,65	352 21 39,50	18 43 27,72	8	28	11 34 41,63	351 18 45,86	— 13 59 21,26	14
5	12 11 24,42	352 33 42,37	18 19 19,18	12	30	14 7 24,42	350 54 36,18	— 15 19 5,99	9
6	11 56 10,21	352 44 51,76	17 55 48,64	6	31	11 54 46,33	350 44 18,70	— 15 52 31,19	10
7	13 18 53,03	352 56 26,24	17 30 8,65	5	Sept. 2	10 57 39,70	350 21 25,79	— 17 3 17,81	14
9	12 15 0,66	353 16 10,05	16 41 15,33	7		13 54 15,56	350 20 3,69	— 17 7 48,96	6
19	12 4 48,15	354 26 51,33	11 54 25,62	4	18	11 23 28,24	347 23 1,26	— 25 3 21,61	6
20	11 53 56,46	354 31 10,20	11 23 1,15	10					
26	11 56 35,53	354 45 40,35	7 59 20,99	14					
28	12 24 44,41	354 46 24,10	6 46 23,60	12					
30	11 32 52,73	354 45 6,84	5 33 26,13	7					

Die Beobachtung vom 19^{ten} Sept. ist als unzuverlässig nicht
mit aufgeführt.

On the Comets of 1556 and 1264.

Von Herrn *John Russel Hind*.

The orbit of the Comet of 1556 was computed by *Halley* from the observations of *Paul Fabricius*. In the „Synopsis of Comets“ *Halley* observes that this orbit is not so certain as many of the others he had calculated, and he adds „the observations were made neither with sufficient instruments nor due care, and on that account are disagreeing with themselves, and can by no means be reconciled with a regular com-

putus.“ This last remark I have found to apply very strongly in my own computations.

M. Pingré in his Cometography has given the rough positions of the comet observed by *Fabricius* and taken from a chart found in *Lycosthenes* and other writers. There is one observation in the Cometography of *Hevelius* which is not mentioned by *M. Pingré*. I extract as follows from page 852

of this work: „Tertio die (Martis) 6 tantum gradibus distabat à Spicâ, recta linea prorsus inter Spicam et inferiorem sub angulo Virginis, caudâ spectante versùs alam sinistram.“

After comparing the places deduced from *Halley's* elements with the positions contained in the *Cometographies* of *Pingré* and *Hevelius*, I thought it possible that an orbit might be found which would represent the earlier observations better than the elements by *Halley*. The only important differences between the longitudes and latitudes of the comet computed from his elements in 1556 and the observed places occur in the early observations. On March 5 the comet is placed by a tolerably definite observation in longitude $188^{\circ} 1'$ and latitude $+2^{\circ} 19'$; the calculated position is in longitude $189^{\circ} 27'$ and latitude $+7^{\circ} 7'$.

In my first attempt to obtain more satisfactory elements I combined the observations on March 5, 9 and 12, but the orbit proved entirely different from *Halley's* in the longitude of perihelion, inclination and perihelion distance: the places deduced from these elements for the period between March 13 and 16, differed very considerably from the observed positions.

In the second attempt, the observations on March 5, 9 and 14 were employed, and the resulting elements were,

12 ^h Greenwich Mean Time	Geocentric Longitude.	Geocentric Latitude.	Distance from ☿.	☉'s True Longi- tude.	Log. Rad. Vect. of the Earth.
March 3	188° 35' 4	— 3° 58' 3	0,18	353° 21' 35''	9,9983643
4	188 19,7	— 1 10,0	0,17	354 21 8	9,9984909
5	187 59,8	+ 2 18,8	0,15	355 20 40	9,9986179
6	187 33,7	+ 6 41,7	0,13	356 20 10	9,9987451
7	186 58,5	+ 12 17,4	0,12	357 19 39	9,9988721
8	186 11,0	+ 19 31,4	0,10	358 19 5	9,9989988
9	185 1,8	+ 28 50,9	0,09	359 18 30	9,9991254
10	183 13,5	+ 40 34,1	0,08	0 17 53	9,9992516
11	180 1,8	+ 54 23,0	0,08	1 17 13	9,9993775
12	172 59,6	+ 68 34,0	0,08	2 16 32	9,9995028
13	148 1,5	+ 80 52,7	0,08	3 15 48	9,9996277
14	60 15,1	+ 82 29,6	0,09	4 15 2	9,9997521
15	31 7,7	+ 75 1,4	0,10	5 14 14	9,9998759
16	23 26,0	+ 68 18,8	0,12	6 13 24	9,9999993

Very small corrections to the elements would probably produce a better agreement, were we in possession of the times of observation. I have throughout the investigation supposed 12^h Mean time at Greenwich, or about 1 o'clock in the morning at Vienna.

In order to test the supposed identity of the comets of 1556 and 1264, I reduced the perihelion and node to the latter year. In determining the time of perihelion passage, I was guided by the position of the comet given in a poem by *Thierry de Vaucouleurs* on the life of Pope *Urban IV*, in

Perihelion Passage 1556 April 21,8012 Mean Greenwich Time
 Perihelion on the orbit $267^{\circ} 37' 7''$ (Old Style).
 Ascending Node..... $176^{\circ} 33,8$
 Inclination..... $36^{\circ} 11,4$
 Log. Perihelion distance $9,75246$
 Motion direct.

I next computed an ephemeris of the comet from these elements for every mean midnight at Greenwich between March 3 and 16. This ephemeris agrees very well with the greater number of the comet's observed positions: the most important differences occur about March 15 and 16 when the comet passed between the poles of the ecliptic and Equator, with a diurnal motion of 15° of a great circle. According to *Fabrizius* the comet was situated in 20° of Aries on March 15; my elements are therefore 10° in error in longitude though the latitude is perhaps nearly correct. The following table contains the ephemeris of the comet, and the longitudes of the Sun and radii-vectores of the Earth taken from *Carlin's* Solar Tables, 1833. I ought to observe that the latitude of the Comet on March 11 and 12 as deduced both from *Halley's* elements and my own differ many degrees from the observation. The difference on the 12th is very large; indeed, on combining this observation with the positions on the 5th and 9th. I found the inclination 50° , or 18° greater than *Halley's*.

which it is stated that when the Sun was situated in 11° of *Leo* the comet was in 30° of *Cancer*.

„Undecimumque gradum Phœbo superante Leonis,

Ter deno Cancrî restitit illa loco.“

The account furnished in this poem appears deserving of some confidence, and hence I have not hesitated to adopt it as the basis of comparison. The time of perihelion passage I fixed on July 9,9 Mean time at Greenwich. With the perihelion and node reduced as above and the inclination and log. least distance found for the comet of 1556, I formed the following

table of the comet's geocentric places. The Sun's longitudes and log. radii-vectores of the Earth were taken from *Carlini's* last tables.

12 ^h Mean Time at Greenw.	☿ Geocentric Longitude.	☿ Geocentric Latitude.	☼ Longitude.	Log. Rad. Vect. of the Earth.
1264				
July 7	136° 21'	+24° 57'	112° 41' 5	0,00675
17	131 14	+30 54	122 15,2	0,00619
22	126 2	+32 44	127 2,9	0,00585
27	118 55	+33 20	131 51,0	0,00546
Aug. 1	.....	.....	136 39,7	0,00501
6	99 28	+29 20	141 28,9	0,00453
11	.....	.....	146 18,6	0,00402
16	74 41	+15 41	151 9,1	0,00350
21	.....	.....	156 0,5	0,00295
26	47 44	— 4 5	160 52,7	0,00236
31	.....	.....	165 45,6	0,00174
Sept. 5	27 57	—19 26	170 39,2	0,00111
10	.....	.....	175 33,6	0,00049
15	12 8	—25 2	180 29,0	9,99986
20	.....	.....	185 25,3	9,99924
25	3 27	—27 8	190 22,6	9,99861
30	.....	.....	195 20,6	9,99797
Oct. 5	358 28	—27 32	200 19,4	9,99735

During the month of July these places agree with what we may presume to have been the position of the comet according to the various accounts collected by Mr. *Pingré* in his memoir on the comet of 1264 (*Mém. de l'Acad.* 1760, p. 179 etc.), and in the Chinese descriptions of the same comet in M. *Edouard Biot's* memoir (*Conn. des Temps* 1846). After the beginning of August the computed places entirely differ from the estimated positions of the comet. Instead of traversing Orion towards the end of its appearance, it would take a higher declination, passing through Auriga and Taurus. Mr. *Pingré's* elements for the comet of 1264 which so much resemble *Halley's* for that of 1556, appear to follow the comet very well.

I made a third attempt to deduce the orbit from the observations between March 5 and 15, and finally arrived at the following results:

Perihelion passage 1556 April 20,9972 Mean T. at Greenwich.
Perihelion on orbit.....262° 49' 1
Ascending Node.....176 29,1
Inclination.....36 39,2
Log. perihelion distance... 9,78254
Motion direct.

The first orbit appears the more correct of the two, and it is the best that I have been able to find from the rough obser-

vations in the cometographies. I think it is impossible to reconcile the positions collected by *Pingré*, with any regular computation. *Pingré* sought in vain for the original observations by *Fabricius*. It is probable that they were contained in a work published at Nurnberg by *Fabricius* in 1556 in 4to, and mentioned by *Lalande* in his Bibliography. Could this work be found in any of the European libraries, it might furnish us with very important details respecting the comet. In addition to the work by *Fabricius*, *Lalande* enumerates the following publications relating to the same comet.

1556 Erfurt, 4to. *Valentini Engelhardt* observatio et significatio cometæ anni 1556. In German.

1556 Viennæ, 4to. *Elegia* cometæ qui apparuit mense martio 1556, a *Martino Mylio Ammaeburgensi*.

1556 Lipsiæ, 4to. De cometa et duabus eclipsibus anni 1656 elegia (*Baldazar Schulzius*).

1556 Erfurt, 4to. *Adami Ursini* Noribergensis Prognosticatio von dem Cometen 1556.

Scheibel in his Bibliography mentions a work on the same comet by *Petrus Hassardus* in Latin, and another by *Hebenstreit*, in German.

The great similarity between the elements of the comet of 1264 computed by M. *Pingré* and M. *Dunthorne*, and those of the comet of 1556 appears strongly indicative of the identity of the comets. I doubt not, were the original observations by *Fabricius* discovered, an orbit might be obtained to represent the path of the comet both in 1264 and 1556, with considerable accuracy: and it is probable that my elements for the comet of 1556 might be found to answer well for that of 1264, by supposing a different time for the perihelion passage, or by discarding the position of the comet in *Thierry's* poem; this however, I have not thought myself justified in doing; his account is certainly one of the best that we possess. It is perhaps needless to observe that the comet of 975, also presents indications of identity with that of 1556; *Pingré* has noticed this circumstance in his cometography.

Assuming therefore, that the period of the comet is about 292 years, its reappearance may be expected at the latter end of 1847 or beginning of 1848. Nevertheless, the near approach of the comet to the earth in the month of March 1556, may have had the effect of altering its present revolution very materially; possibly of causing its return before the year 1847.

John Russell Hind.