

Results of an Informal NARCAP Advisor Survey
on Which Visual Phenomena Should be Studied¹

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An informal survey was completed on February 17, 2001 during NARCAP'S organizational meeting. Each participant-advisor present rated two things: (a) the current level of understanding by "mainstream science of each of twenty eight (28) different visual phenomena that occur in the earth's atmosphere, and (b) the degree to which any of these phenomena should become an area of concern to NARCAP? The NARCAP advisors and guests who took this survey consisted of highly educated individuals working primarily within many areas of science, technology, and aviation. They included astronomers, astrophysicists, aeronautical engineers, computer scientists, pilots and flight instructors, air traffic controllers, science journalists, and other specialties. The following results are considered only as advisory and will be used by NARCAP management in planning future activities.

(a) What is the Current Level of Understanding by Mainstream Science?

Table 1 presents various statistics that summarize the participants' ratings to this question. The rating scale used was: 0 = none; 1 = pure speculation, 2 = partially understood, and 3 = well understood (by today's scientists).

1. This survey was conducted in order to gain more insight about what our NARCAP colleagues felt were the key areas of emphasis for future research. The results are considered advisory.

Table 1

Results of Survey on Understanding
by Mainstream Scientists

	ASTEROID	AURORA	BOLIDE	CHEMTRAILS	CLOUD
N of cases	16	14	8	11	14
Sum	136	105	36	66	105
Mean	8.5	7.5	4.5	6.0	7.5
Standard Dev.	3.83	2.54	2.13	2.95	3.28
	CONTRAIL	EARTHQ. LIGHTS	EBL (note 2)	FOO FIGHTER	GREEN FLASH
N of cases	15	12	5	10	10
Sum	120	21	6	9	18
Mean	8.0	1.75	1.2	0.9	1.8
Standard Dev.	2.64	0.62	0.44	0.56	0.78
	GREEN FIREBALL	LIGHTNING	MARINE WHEEL	METEOR	METEORITE
N of cases	8	15	5	16	16
Sum	11	39	7	42	43
Mean	1.37	2.6	1.4	2.62	2.68
Standard Dev.	0.51	0.50	0.54	0.50	0.47
	MIRAGE	MOCK SUN	NOC. LIGHTS	PARHELIA	SKY FLASH
N of cases	14	11	10	5	7
Sum	29	27	17	9	11
Mean	2.07	2.45	1.70	1.80	1.57
Standard Dev.	0.47	0.52	0.67	0.83	0.78
	SPACE FLASH	SPRITE	SAINT ELMOS	SUB SUN	SUN DOG
N of cases	5	6	13	4	10
Sum	4	13	28	9	24
Mean	0.80	2.16	2.15	2.25	2.40
Standard Dev.	0.83	0.75	0.80	0.95	0.69
	UAP	VOLCANO LIGHT	WILL-O-WISP		
N of cases	14	9	5		
Sum	16	14	10		
Mean	1.14	1.55	2.00		
Standard Dev.	0.94	0.72	1.00		

2. Expanding Ball of Light (see Haines, R.F., Expanding Ball of Light Phenomenon, J. of Scientific Exploration, vol. 2 no. 1, pp. 83-85, 1988)

(b) Should This Phenomenon Become an Area of Research Concern to NARCAP?

Table 2 provides the survey results obtained to this question. The rating scale used was: 0 = no, never, 1 = perhaps, but only later, 2 = yes, but of lower importance, and 3 = yes, immediately.

Table 2
Results of Survey Concerning NARCAP
Interest/Concern in Each Visual Phenomenon

	ASTEROID	AURORA BOREAL	BOLIDE	CHEMTRAIL	CLOUD PHENO.
N of cases	16	16	10	15	16
Sum	17	12	13	29	10
Mean	1.06	0.75	1.30	1.93	0.62
Standard Dev.	1.06	0.93	0.94	0.96	0.95
	CONTRAIL	EARTHQUAKE	EBL	FOO FIGHTER	GREEN FLASH
N of cases	16	14	11	12	12
Sum	21	31	20	22	16
Mean	1.31	2.21	1.81	1.83	1.33
Standard Dev.	1.30	1.12	1.08	1.12	1.16
	GREEN FIREBALL	LIGHTNING	MARINE	METEOR	METEORITE
N of cases	12	16	9	16	16
Sum	17	22	12	20	14
Mean	1.41	1.38	1.33	1.25	0.88
Standard Dev.	0.99	1.20	1.41	1.13	1.09
	MIRAGE	MOCK SUN	NOCTURNAL LIGHT	PARHELIA	SKYFLASH
N of cases	15	10	13	8	10
Sum	23	6	33	6	17
Mean	1.53	0.60	2.54	0.75	1.70
Standard Dev.	1.25	0.70	0.88	1.17	1.16
	SPACE FLASH	SPRITE	ST. ELMO'S FIRE	SUB SUN	SUN DOG
N of cases	8	7	14	7	10
Sum	15	6	12	4	7
Mean	1.88	0.86	0.86	0.57	0.70
Standard Dev.	1.13	0.90	0.86	0.79	0.68
	UAP	VOLCANIC LIGHT	WILL-O-WISP		
N of cases	13	11	8		
Sum	34	17	12		
Mean	2.62	1.55	1.50		
Standard Dev.	0.96	1.21	1.41		

The means from Table 1 were rank ordered from least to most “understood by mainstream science” (cf., Col. A of Table 3) with corresponding mean ratings of their “interest to NARCAP” (Col. B).

Table 3

Rank Ordered Mean Ratings of Phenomena
 Judged Understanding by Current Science with
 Corresponding Mean Ratings of Judged Interest to NARCAP

Visual Phenomenon	A Rank Ordered Mean Ratings of Under- standing by Current Science	B Mean Rating of “Concern to NARCAP”
Space flashe(s)	0.80	1.88
Foo Fighter(s)	0.90	1.83
UAP	1.14	2.62
Expanding ball of light	1.20	1.82
Chem trail(s)	1.27	1.93
Green fireball(s)	1.38	1.42
Marine wheel(s)	1.40	1.33
Will-o-wisp	1.56	1.50
Sky flash(es)	1.57	1.70
Noctural light(s)	1.70	2.54
Earthquake light(s)	1.75	2.21
Green flash	1.80	1.33
Parhelia	1.80	0.75
Mirage(s)	2.07	1.53
St. Elmo’s fire	2.15	0.86
Sprite(s)	2.17	0.86
Sub sun	2.25	0.57
Sun dog	2.40	0.70
Mock sun	2.46	0.60
Bolide(s)	2.50	1.30
Lightning	2.60	1.38
Meteor(s)	2.63	1.25
Asteroid(s)	2.69	1.06
Meteorite(s)	2.69	0.88
Cloud(s)	2.71	0.63
Contrail(s)	2.80	1.31
Aurora	2.86	0.75

It should be noted that these two columns of means differ significantly using a paired t test ($t = 2.91$; $p = 0.007$; $df = 27$) but do not possess a significant rank-order correlation ($r = 0.73$).

The primary purpose for administering this survey was to find out what visual phenomena our advisors felt we should focus on in future theoretical studies in order to provide needed informational preparation for our field studies. A score of 3 indicated that the advisor felt that that particular phenomenon should be of immediate concern to NARCAP, a score of 2 indicated it is thought to be of interest but of lower importance, and a score of 1 indicated that only later might NARCAP investigate it. We are, therefore, interested primarily with phenomenon having mean scores between about one and one-half to three (cf. Table 4). Note here, that there tended to be greater divergence of opinion in the lower mean scored items as indicated the larger standard deviation values.

Table 4

Rank ordered Visual Phenomena from Table 2
with Scores greater than 1.5.

	Mean	SD
Unidentified Aerial Phen.	2.61	0.96
Nocturnal Lights	2.54	0.88
Earthquake Lights	2.21	1.12
Chem. Trails	1.93	0.96
Space Flashes	1.88	1.13
Foo Fighters	1.83	1.12
Sky Flashes	1.70	1.16
Volcanic Lights	1.55	1.21
Mirages	1.53	1.25

The visual phenomena listed in Table 4 provides useful guidance from our advisors on directions in which future research should proceed. The Executive Staff wishes to thank each participant for their assistance.

As NARCAP makes clear on its website and all of its reference documents, we take no public position on the origin or cause of unidentified aerial phenomena (UAP) in particular but desire to let the data speak for themselves.